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# PERSPECTIVES

ON LABOUR AND INCOME

**SPRING 2005**

Vol. 17, No. 1

- USING RRSPs  
BEFORE RETIREMENT
- THE RISING PROFILE OF  
WOMEN ACADEMICS
- DURATION OF  
NON-STANDARD  
EMPLOYMENT
- EARNINGS OF  
TEMPORARY  
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ON LABOUR AND INCOME

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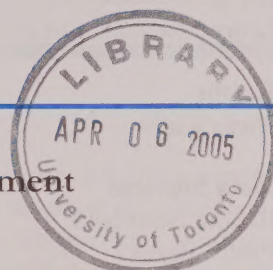
*Deborah Sussman and Labouaria Yssaad*

Over the past several decades, women have made significant inroads into many traditionally male-dominated occupations. One of these is university teaching. The article looks at the growth in the number of women teaching full time at Canadian universities between 1990-91 and 2002-03, examining changes in their representation by academic rank, tenure status, and field of instruction.

### 31 Duration of non-standard employment

*Costa Kapsalis and Pierre Tourigny*

The economic consequences of non-standard work depend greatly on whether the situation is short-term or long-term. A look at the characteristics of three distinct groups of non-standard workers: the self-employed, employees with permanent part-time jobs, and temporary employees.





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## 40 Earnings of temporary versus permanent employees

*Diane Galarneau*

This study looks at the wage gap between temporary and permanent employees over the 1997 to 2003 period. The comparison is made according to type of temporary employment, since the characteristics of employees vary greatly according to whether they are term or contract, seasonal, casual, or from a temporary agency. Also addressed is the economic vulnerability of temporary workers: Does the wage gap persist when hours worked, earnings of other household members, and number of dependants are considered?

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### Perspectives on Labour and Income

*The quarterly for labour market and income information*



# Forum

*From the Managing Editor*

■ Starting with this issue, *Perspectives on Labour and Income* will publish a thematic set of indicators highlighting income and consumption taxes paid by Canadians. These will be found in the Key Labour and Income section. Historical perspectives on taxfilers, type of tax paid (income, GST, sales), vertical and horizontal equity of income tax, filers paying no income tax and those receiving tax credits, as well as international comparisons of tax loads will be included. Various sources will be used, including the Canada Revenue Agency, Statistics Canada, Department of Finance, OECD, and the World Bank.

Income and sales taxes are the major sources of funds for both the federal and provincial governments and thus affect their ability to deliver public programs and services. Individuals pay taxes expecting that governments will provide the appropriate public services. Determining the optimum level of taxation and mix of services is one of the basic challenges of governments.

Higher taxes mean less disposable income to save or spend on private consumption. They also affect income distribution since Canada has a progressive income tax system: those with higher incomes pay

taxes at higher rates than those with low incomes. The GST and provincial sales taxes, on the other hand, are collected at the same rate for everyone although their sting is lessened by income tax rebates for low income families.

In this first instalment, a historical perspective on taxfilers is presented in 15 charts. With the exception of the first chart, the period examined is 1972 to 2002. The charts cover the population 15 and over, outlining the number of taxfilers and their sex, age, assessed income, deductions and tax paid. These are then linked with federal and provincial government revenues, expenditures on goods and services, and finally the GDP. The last four indicators, based on macro-economic data, will also be used in international comparisons.

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## Perspectives

**We welcome your views** on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

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# Highlights

## *In this issue*

### ■ Using RRSPs before retirement

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- The practice of withdrawing money from RRSPs before retirement is not restricted to lower-income groups. Between 1993 and 2001, over 40% of those in the middle income deciles with RRSPs made withdrawals.
- Overall, less than 40% of those withdrawing money from an RRSP in 1993 had repaid the money by 2001. The proportion was even lower for older age groups (22% for those 50 to 59).
- Close to one-fifth of withdrawers aged 50 to 59 took out relatively large amounts (\$10,000 or more) and were less likely to repay them.
- People whose spouse died, who lost their job involuntarily, or who started a new business withdrew substantial sums (\$10,000 or more) more frequently.

### ■ The rising profile of women academics

... p. 16

- Close to 11,000 women were full-time faculty members of Canadian universities in 2002-03, accounting for 30% of all full-time faculty—a notable improvement from 20% only twelve years earlier.
- Women strengthened their presence during the period in both traditional and non-traditional disciplines and made notable gains in tenure status and academic rank.
- Women's median salaries remain below those of their male colleagues, although the gap generally narrows when rank and field of study are taken into account.

### ■ Duration of non-standard employment

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- While most working Canadians are standard workers, the majority of new entrants to the labour market, or re-entrants following a period of joblessness, are initially non-standard workers. About 60% of individuals who moved from no employment in 1999 into employment in either 2000 or 2001 originally found non-standard jobs.
- Once engaged in non-standard employment, the majority of workers remain in such jobs for an extended period of time. More than half (54%) of the 5.0 million people in non-standard jobs in 1999 maintained this form of employment throughout the following two years.
- A high proportion of persons who were self-employed in 1999 were in the same type of work two years later (68% of own-account workers and 76% of employers). In contrast, only 31% of full-time and 18% of part-time temporary workers held the same type of job in both 1999 and 2001.
- Persons in temporary full-time jobs in 1999 were the most likely of all types of non-standard workers to have found standard employment by 2001 (39%, compared with only 7% of employers).

### ■ Earnings of temporary versus permanent employees

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- Temporary employment increased almost twice as rapidly as permanent employment in recent years, despite a period of economic growth and favourable employment conditions. Temporary jobs accounted for almost one-fifth of overall growth in paid employment between 1997 and

2003. This stood against the 12.5% of paid employment that temporary employment represented in 2003.

- The characteristics of temporary employees vary greatly according to the type of temporary employment. For example, contract workers are often in jobs requiring numerous skills. Seasonal employees are usually men and have relatively little education. Casual employees are largely women and often work part time. Workers obtaining jobs through an employment agency are sometimes highly educated but hold jobs requiring few skills.
- In 2003, temporary workers earned 16% less per hour than their permanent counterparts (\$16.69 versus \$19.98). From 1997 to 2003, the gap varied between -16% and -19%.
- Of the four types of temporary workers, contract employees showed the smallest gap; they earned 8% less than their permanent counterparts in 2003. Seasonal employees, casual employees and others, and those using employment agencies earned 28%, 24% and 40% less respectively.
- The gaps largely persist even when number of hours worked and family situation are taken into account. In general, hours worked widens the gap since temporary employees work less hours per week. Spousal earnings reduces it, given the more significant contribution of spousal earnings for temporary workers.

## ■ What's new?

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Are good jobs disappearing in Canada?  
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Working hours of the world unite?  
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When financial work incentives pay for themselves  
Tax treatment of private pension savings in OECD countries

## Perspectives



# Using RRSPs before retirement

Philip Giles and Karen Maser

**L**ike many other countries, Canada has a government incentive to encourage personal saving for retirement. Most Canadians are aware of the benefits of RRSPs (registered retired savings plans), both the immediate tax advantage and the tax-sheltered compounding of capital. However, not everyone is in a position to save in this manner, nor is the money saved always used as a source of income in retirement. Despite the consequences of withdrawing money from RRSPs (savings are reduced and tax must be paid), many people do just that. This article uses two different sources to examine premature RRSP withdrawals<sup>1</sup> between 1993 and 2001, looking at whether major life events such as a marital separation, death of a spouse, or loss of a job affect this behaviour (see *Data sources and definitions*).

RRSPs constitute an essential component of Canada's retirement income system, especially for those whose income from government-sponsored retirement programs alone will make it difficult for them to maintain the same standard of living (see *Canada's retirement income system*). Understanding who uses RRSPs, and who needs or opts to withdraw funds from them, can help identify those who may not be financially prepared for retirement.

## Many withdraw funds from RRSPs

Close to two-thirds of taxfilers aged 20 to 59 as of the end of 1992 contributed to an RRSP at least once between 1993 and 2001. However, during this same period, over one-quarter made at least one withdrawal (Table 1). Taking those withdrawing as a percentage of those known to have invested in an RRSP (because they made a contribution or a withdrawal over this period), the withdrawal rate jumps to 39%.<sup>2</sup>

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Decidedly, income is a factor. Just 9% of taxfilers in the lowest income decile withdrew money over the period. This increased to just over 30% in each of the 6<sup>th</sup> to 9<sup>th</sup> income deciles. Not surprisingly, lower-income people are also much less likely to contribute to an RRSP. As a percentage of those known to have an RRSP, three-quarters in the lowest decile, and over half in the second lowest, withdrew money. Not only are lower-income people less likely or able to save, they are much more likely to make withdrawals.

For many in the lowest income deciles, income from the Old Age Security/Guaranteed Income Supplement, and the Canada and Quebec Pension Plans will more than replace pre-retirement earnings (see *Earnings replaced by OAS/GIS and C/QPP*). Hence, additional income from RRSPs may not be required to maintain their standard of living. Since this is unlikely

**Table 1: Taxfilers making RRSP contributions or withdrawals in at least one year**

Income decile	Contributors	Withdrawers	
		Taxfilers	RRSP holders*
		%	
<b>Total</b>	<b>64.7</b>	<b>26.4</b>	<b>38.9</b>
Lowest	4.3	9.0	75.7
Second	14.8	12.1	56.5
Third	26.7	15.5	48.5
Fourth	44.1	21.6	44.3
Fifth	60.8	27.8	43.2
Sixth	71.8	31.6	42.3
Seventh	79.7	34.2	41.6
Eight	85.7	33.8	38.6
Ninth	90.1	31.1	34.1
Highest	94.9	25.1	26.3

Source: Canada Revenue Agency, PA/RRSP file, 1993-2001

\* Contributed or withdrew from 1993 to 2001.

## Data sources and definitions

The **Pension Adjustment/Registered Retirement Savings Plans (PA/RRSP) file** was created by Statistics Canada from information provided by the Canada Revenue Agency. This longitudinal file contains basic demographic information for every taxfiler, as well as information about their participation in registered pension plans (RPPs) and RRSPs (contributions and withdrawals for RRSPs). The file is the only source of longitudinal information on savings for retirement through these two programs. This analysis looked at the years 1993 to 2001.

The **Survey of Labour and Income Dynamics (SLID)** is a longitudinal household survey designed to capture changes over time in the economic well-being of individuals and families. Individuals are interviewed annually for six years to collect information about their labour market experiences, income, and family circumstances. The first reference year was 1993. A second panel of respondents was introduced for 1996, halfway through the life span of the first. When the first panel ended, a third one began for the reference year 1999. This pattern of rotating, overlapping panels will continue, with a new panel every three years. Each panel comprises approximately 15,000 households, for a total of about 31,000 adults aged 16 and over.

### Who is included?

This analysis focused on the population 20 to 59 years of age—those most likely to be receiving employment income and therefore eligible to contribute to RRSPs. Many under 20 were still in school and many over 59 already retired. Including these ages could distort the data. (Information from SLID for the year 2001 indicates that only about one-third of those 16 to 19, and 13% of those over 59, reported their major activity as 'working' or 'looking for work.') A further refinement excluded anyone with pension income (OAS/GIS, C/QPP, RRSP or RPP). An income tax return (T1) needed to have been filed in 1993 and 2001 but could have been missing in some of the intervening years. If so, income and RRSP contributions or withdrawals were assumed to be zero.

For tables covering the entire periods, age was determined as of the end of 1992. For those tables with information for each year, age was determined as of the end of the year in question.

Because SLID excludes the territories, these were also excluded from the PA/RRSP file.

### Life events

Data for all seven possible three-year periods between 1993 and 2001 were used (starting with 1993 to 1995 and ending with 1999 to 2001). The results for the seven periods were then aggregated.

The population at risk was identified according to the situation at the end of the first year of the three-year period. In defining this population, it would have been desirable to include the criterion that the person had money in an RRSP account, but this information was not collected.

For purposes of this analysis, the life event would have occurred in the second year of the period, and the RRSP withdrawal would have taken place during one of the last two years.

The analysis focused only on major income earners (MIE) of economic families at the end of the first year, and their spouses or common-law partners. RRSP withdrawals, if any, were for the individual—in this case either the MIE or the spouse. Further analysis could be done to take into account RRSP withdrawals by either the MIE or the spouse following these life events.

### Separation or divorce

Population at risk: Persons living with a spouse; the analysis was done separately for the MIE and the spouse of the MIE.

Definition of event: Couple were living together at the end of the first year but not at the end of the second year.

### Death of a spouse

Population at risk: Persons living with a spouse; the analysis was done separately for the MIE and the spouse of the MIE.

Definition of event: Couple were living together at the end of the first year, but one of them died during the second year.

### Involuntary job loss

Population at risk: Persons with a job; the analysis was done separately for the MIE (with or without a spouse) and any spouse of the MIE.

Definition of event: Person had a job at the end of the first year but lost their job involuntary (i.e., did not quit) during the second year. The job lost was the person's main job.

### Returning to school full time

Population at risk: Persons who were not full-time students; the analysis was done separately for the MIE (with or without a spouse) and any spouse of the MIE.

Definition of event: Person was not a full-time student during the first year but became one during the second year.

RRSP withdrawal: The use of RRSP funds as part of the Lifelong Learning Plan (LLP) was excluded since this is a feature of the RRSP program. The LLP allows RRSP withdrawals of up to \$20,000 to finance training or education. No tax penalty is incurred as long as the money is repaid within a prescribed period.

### Buying a house

Population at risk: Persons who did not own their dwelling; the analysis was restricted to MIEs, since the spouse would have experienced the same life event.

Definition of event: Residence was not owned at the end of the first year but was owned at the end of the second year.

RRSP withdrawal: The use of RRSP funds as part of the Home Buyers Plan (HBP) was excluded since this is a feature of the RRSP program. The HBP plan allows first-time home buyers to withdraw up to \$20,000 from their RRSP with no tax penalty for the purchase of a home as long as they repay their RRSP within a prescribed period.

### Birth of a child

Population at risk: Persons living with a spouse; the analysis was restricted to MIEs, since the spouse would have experienced the same life event.

Definition of event: Couple had or adopted a child during the second year.

### Starting a business

Population at risk: No extra restrictions were placed on this population; the analysis was for MIEs only, since in many situations the spouse would have experienced the same life event.

Definition of event: Person started a self-employed job during the second year.



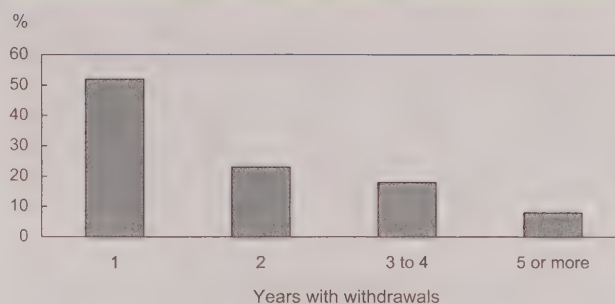
to be the case for those in the higher income deciles, the implications of taking money out of an RRSP may be greater. However, although the percentage of RRSP holders who withdrew money declines somewhat as income increases, even in the seventh income decile over 40% made a withdrawal at least once between 1993 and 2001.

### Many withdraw more than once

The PA/RRSP file shows not only whether a withdrawal was made but also whether it occurred more than once. Indeed, almost half (48%) of those withdrawing money did so in more than one year, while a quarter removed funds in at least three of the nine years (Chart A). These people may have had unexpected expenses, or they may not have viewed their RRSP as a means of long-term savings, using it instead to reduce current taxes or set aside money for periods of lower income (LeBlanc 2002). The self-employed are particularly subject to income volatility and may be more likely to use RRSPs in this way (Palameta 2003). Unfortunately, the PA/RRSP file cannot identify the self-employed or the reason for the withdrawal.

The use of RRSPs to smooth income is clear: People who frequently withdraw money still make contributions—even more often than others. Over half of those who made three or more withdrawals contributed in at least five of the nine years. A much lower proportion (38%) of all taxfilers contributed that frequently (Table 2).

**Chart A: Almost half of those withdrawing from RRSPs between 1993 and 2001 did so in more than one year.**



Source: Canada Revenue Agency, PA/RRSP file

### Are withdrawals repaid?

Do frequent withdrawers contribute more often in an attempt to pay back the money they have withdrawn? This is difficult to determine since reasons for contributing or withdrawing are not available. However, it is possible with the PA/RRSP file to see whether, in the time frame of this study, people returned the amounts they withdrew by making subsequent contributions. All contributions and withdrawals were converted to 2001 dollars, since simply returning the exact dollar amount of the withdrawal would not be enough to account for the return the amount would have

**Table 2: Pattern of RRSP withdrawals and contributions**

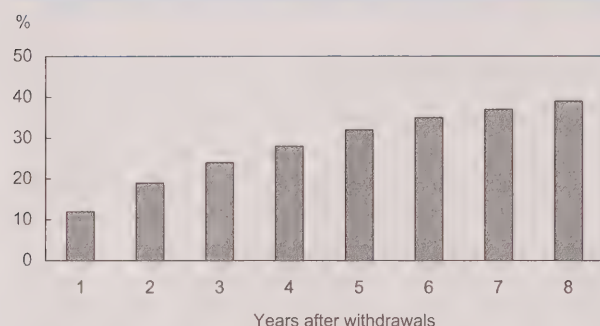
	Years of contribution											
	Total		Zero		One		Two		3 or 4		5 or more	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
<b>Years of withdrawal</b>	<b>11,414</b>	<b>100</b>	<b>4,029</b>	<b>35</b>	<b>920</b>	<b>8</b>	<b>756</b>	<b>7</b>	<b>1,329</b>	<b>12</b>	<b>4,381</b>	<b>38</b>
None	8,401	100	3,672	44	562	7	430	5	742	9	2,996	36
One	1,562	100	230	15	220	14	176	11	283	18	653	42
Two	694	100	66	10	75	11	83	12	149	21	322	46
Three or more	757	100	60	8	64	8	68	9	155	21	410	54

Source: Canada Revenue Agency, PA/RRSP file, 1993-2001

earned had it remained in the RRSP. Repaying amounts withdrawn places an individual in a different situation from someone not making a withdrawal: The latter could continue to make further contributions and accrue earnings on them.<sup>3</sup>

Although many of those withdrawing money from an RRSP make subsequent contributions, it can take years to repay the withdrawal. Three years after withdrawing from their RRSP, just one-quarter had repaid the amount. This increased to about one-third after five years, but was still under 40% by the end of the study period (Chart B).

**Chart B: Even eight years after a withdrawal, less than 40% had repaid their RRSP.**



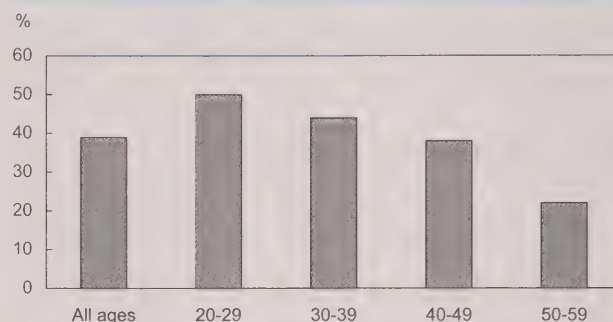
Source: Canada Revenue Agency, PA/RRSP file

Those who were older (50 to 59) when they made their first withdrawal in 1993 were least likely to have returned the money eight years later. (Chart C). By 2001, just 22% were back to the situation they had been in prior to the withdrawal in 1993, not taking into account any additional contributions that could have been made, along with accrued earnings. For older individuals, this could have serious implications in terms of the amount of income they can generate from their RRSP.

### All ages equally likely to make withdrawals

Even though older people are closer to retirement, they are just as likely to take money out of their RRSPs. Approximately one-quarter of those in all age groups, from 20 through to 59 as of the end of 1992, made a withdrawal between 1993 and 2001. In fact, older withdrawers were somewhat more likely to make multiple withdrawals, although the difference is not

**Chart C: Only 22% of those 50 to 59 making a withdrawal in 1993 had repaid it by 2001.**



Source: Canada Revenue Agency, PA/RRSP file

pronounced. Close to 29% of withdrawers aged 50 to 59 made at least three withdrawals, compared with 23% of those 20 to 29 (Table 3).

### Withdrawers up sharply over the period

Although the proportion of taxfilers taking money out of their RRSP in 2001 may not appear to be large at 6.7%, it was almost double the 3.8% in 1993. In comparison, the proportion contributing to RRSPs rose only 18.4% over the period (Table 4). In 2001, just over one million withdrew money and 5.7 million contributed.

While the number of people withdrawing increased, the median withdrawal amount fell significantly—over 46%.<sup>4</sup> The median withdrawal in 2001 was \$1,600. In comparison, the median contribution increased 11% to \$2,600.

**Table 3: RRSP withdrawals by age\***

	All ages	20-29	30-39	40-49	50-59
Taxfilers (%)					
Withdrawals	26.4	26.3	27.3	25.6	23.8
One	13.7	14.4	14.0	12.7	11.6
Two	6.1	5.9	6.2	6.2	5.4
Three or more	6.6	6.0	7.1	6.7	6.8
Withdrawers (%)					
Withdrawals					
One	51.8	54.8	51.2	49.5	48.8
Two	23.0	22.5	22.8	24.1	22.7
Three or more	25.1	22.7	26.0	26.3	28.5

Source: Canada Revenue Agency, PA/RRSP file, 1993-2001  
\* As of the end of 1992.

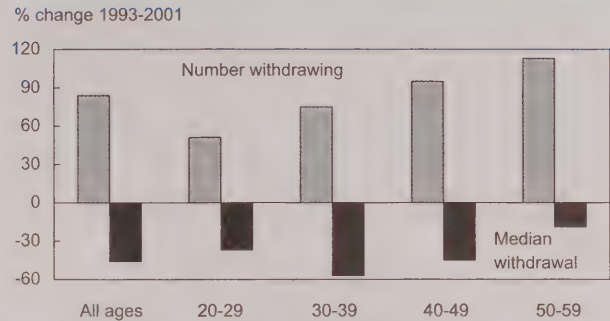


**Table 4: RRSP withdrawers and contributors**

	Taxfilers	
	'000	%
<b>1993</b>		
Withdrew	570	3.8
Contributed	4,509	30.4
<b>1994</b>		
Withdrew	620	4.1
Contributed	4,739	31.3
<b>1995</b>		
Withdrew	743	4.8
Contributed	5,182	33.8
<b>1996</b>		
Withdrew	805	5.2
Contributed	5,477	35.4
<b>1997</b>		
Withdrew	863	5.5
Contributed	5,623	36.0
<b>1998</b>		
Withdrew	929	5.9
Contributed	5,627	35.7
<b>1999</b>		
Withdrew	939	6.1
Contributed	5,645	36.6
<b>2000</b>		
Withdrew	1,067	6.6
Contributed	5,800	35.9
<b>2001</b>		
Withdrew	1,049	6.7
Contributed	5,657	36.0
		%
<b>Change 1993-2001</b>		
Withdrew	84.0	76.3
Contributed	25.5	18.4

Source: Canada Revenue Agency, PA/RRSP file, 1993-2001

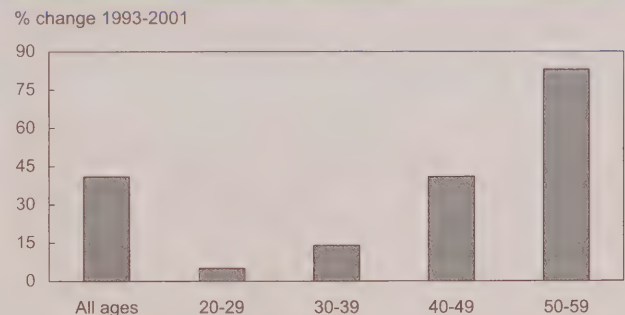
These trends varied greatly by age (Chart D). Those 50 to 59 experienced a more modest decline in the median withdrawal amount (-19%), together with the biggest jump in the number of persons withdrawing. As a result, the total amount withdrawn by people in this age group increased 83%. This is consistent with the results of an earlier study, which looked at the period from 1991 to 1994 (Frenken 1996). In contrast, the increase in the amount withdrawn by younger age groups was much smaller (Chart E). This was due to both a more modest increase in the number withdrawing and a much larger drop in the median withdrawal. This was most pronounced for those 30 to 39; their median withdrawal was down 57%.

**Chart D: Number withdrawing from RRSP up, but median withdrawal down.**

Source: Canada Revenue Agency, PA/RRSP file

### Younger individuals withdraw smaller amounts

Amounts withdrawn shed some light on the reasons for differences between age groups. Although more younger people have been withdrawing funds from their RRSP, they tend to withdraw much smaller sums than in the early 1990s. This is most striking for those 30 to 39: In 1993, just 8% took less than \$500 out of their RRSP, compared with just over 30% in 2001 (Table 5). Although less pronounced, the same trend can be seen for those 20 to 29. Perhaps younger age groups are perceiving saving for retirement as important and attempting to minimize the amounts they remove. Certainly, earlier studies have shown that more young people are investing in RRSPs (Aldridge 1997) and that, income and other variables held

**Chart E: Increase in total withdrawn from RRSPs much greater for those 50 to 59.**

Source: Canada Revenue Agency, PA/RRSP file

## Canada's retirement income system

**Old Age Security (OAS)** guarantees a minimum income to all persons 65 or older who meet prescribed residency requirements, regardless of work history. The benefit is gradually reduced if net income exceeds a certain amount (about \$55,300 in 2001) and eliminated altogether when income reaches about \$90,000. Additional benefits are provided to low-income seniors through the Guaranteed Income Supplement (GIS) and the Allowance. The latter is paid to spouses/partners (aged 60 to 64) of OAS pensioners. Benefits are paid from the federal government's consolidated revenue fund; specific contributions to this program are not required.

**Canada and Quebec Pension Plans (C/QPP)** are intended to replace a portion of employment earnings. The plans cover almost all workers and are compulsory for those 18 and over. Both employers and employees contribute (the self-employed pay both shares), providing a benefit equal to about 25% of the average wage (as measured by Statistics Canada's Survey of Employment, Payrolls and Hours), up to a specified maximum. This benefit is paid at 65, although individuals can opt to receive it as early as 60 (reduced) or as late as 70 (augmented).

OAS/GIS and C/QPP are designed to provide a basic income for seniors. As of January 2001, a single person 65 or older with no other income received an annual OAS/GIS benefit of about \$11,330; if the person was also receiving C/QPP, this increased to just under \$16,000.

In 2001, the median earnings of individuals heading into retirement (aged 45 to 54) were \$30,842; OAS/GIS and C/QPP would have replaced about 50%. (This calculation was done assuming people had contributed to the C/QPP for the maximum required years and therefore likely inflates the replacement rate.) For couples with at least

one partner aged 45 to 54, median earnings in 2001 were \$64,962. These two programs would replace just over 40% of those earnings.

The percentage of earnings required to maintain a similar standard of living in retirement depends on a number of factors and can vary considerably, depending on the circumstances of the individual or couple. Financial planners often use 70% as a rule of thumb (HRDC 2001), although this has been the subject of much debate. The income provided by OAS/GIS and C/QPP would give many an income replacement rate far below this percentage. This increases the importance of the third component of the retirement income system:

**Employer pensions and personal savings:** Employer-sponsored registered pension plans (RPPs) are commonly used by employers to provide their employees with an income in retirement. However, employers are not obligated to provide a plan, and only about a third of employees belong to one. Benefits vary widely. Contributions are made by the employers and, if the plan is contributory, by the employees as well.

Employees who do not belong to RPPs and the self-employed must save for retirement on their own if they wish to supplement income from OAS/GIS and C/QPP. Registered retirement savings plans (RRSPs) provide one means to do this. To encourage saving, no tax is paid on either the amount contributed (to a prescribed maximum) or on the investment return on these funds. However, tax is paid when funds are withdrawn.

RRSPs, therefore, are a critical component of the retirement income system. Withdrawing money from them has consequences: Tax is immediately payable and retirement savings are diminished.

### Maximum monthly and annual benefits from OAS/GIS and C/QPP for persons 65 or older, January 2001

	Monthly	Annual
		\$
C/QPP – age 65	775	9,300
OAS	431	5,176
GIS – single person	513	6,152
GIS – spouse of OAS pensioner	334	4,007
OAS + GIS – single person, no other income		11,328
OAS + GIS – couple, both receiving GIS, no other income		18,367
OAS + C/QPP + GIS, reduced – single person, no other income		15,978
OAS + C/QPP – couple, both receiving maximum C/QPP, income too high for GIS, no other income		28,953

*Note: OAS/GIS annual amounts assumes that the monthly rate in effect in January applies for the entire year.*

constant, they are more likely than older people to contribute to them (Palameta 2003). Another factor could be the stronger economy at the end of the decade, which may have reduced the need to use savings from RRSPs.

That older individuals more commonly withdraw larger amounts may not seem surprising, given they would have accumulated more in their RRSP. What is

striking for those 50 to 59 is the amounts being withdrawn. In 2001, close to one-third of withdrawers removed at least \$6,000—this at a time in their lives when returning money to an RRSP could prove quite difficult and, as shown, is not likely to happen. This age group represented 20% of all those withdrawing money in 2001, up slightly from 17% in 1993. What would make people take this action at this stage



**Table 5: RRSP withdrawals, by age\***

	All ages	20-29	30-39	40-49	50-59
	% of withdrawers				
<b>1993</b>					
Less than \$500	8.2	16.2	8.4	6.1	4.7
\$500 to \$999	9.4	17.6	10.0	6.6	6.1
\$1,000 to \$1,999	19.1	26.5	21.7	16.2	13.0
\$2,000 to \$2,999	14.2	14.4	16.0	12.5	13.3
\$3,000 to \$3,999	10.0	8.5	10.6	10.1	10.0
\$4,000 to \$4,999	7.0	5.3	7.1	7.4	7.4
\$5,000 to \$5,999	7.5	3.8	6.8	8.7	9.8
\$6,000 to \$9,999	10.9	5.9	10.2	12.6	14.3
\$10,000 or more	13.8	2.5	9.3	19.9	21.7
<b>1997</b>					
Less than \$500	15.5	25.3	19.7	11.5	7.4
\$500 to \$999	11.2	17.4	12.7	9.1	7.3
\$1,000 to \$1,999	18.8	24.2	19.5	17.3	16.3
\$2,000 to \$2,999	11.8	12.4	12.1	11.4	11.4
\$3,000 to \$3,999	8.2	6.6	8.0	8.9	8.8
\$4,000 to \$4,999	5.9	3.7	5.5	6.2	7.7
\$5,000 to \$5,999	6.4	3.3	5.6	7.6	8.4
\$6,000 to \$9,999	9.7	4.2	8.3	11.6	13.4
\$10,000 or more	12.4	2.5	8.6	16.5	19.8
<b>2001</b>					
Less than \$500	22.7	31.5	30.2	18.9	11.1
\$500 to \$999	13.4	20.8	15.7	11.5	8.0
\$1,000 to \$1,999	17.9	21.2	18.1	17.9	15.7
\$2,000 to \$2,999	9.7	10.6	8.9	10.0	10.2
\$3,000 to \$3,999	6.6	5.2	5.7	7.2	8.2
\$4,000 to \$4,999	6.0	3.7	5.1	6.6	7.6
\$5,000 to \$5,999	4.7	2.0	4.1	4.9	6.9
\$6,000 to \$9,999	8.5	3.9	6.4	9.9	12.9
\$10,000 or more	10.4	1.3	5.9	13.3	19.0

Source: Canada Revenue Agency, PA/RRSP file

\* As of the end of 1992

of their life? The Survey of Labour and Income Dynamics provides information on changes to individual and family circumstances that could precipitate the removal of money from an RRSP.

### Life events linked to withdrawals

Major life events often have financial implications, and RRSP withdrawals may be a source of needed cash. Seven life events were identified. The basic approach was to examine persons aged 20 to 59 who experienced an event and then determine the proportion making a withdrawal in either the same or following year. This proportion was then compared with the 'at risk' population. It is not possible to conclude that the RRSP withdrawal was caused by the life event, only that it happened around the same time.

This analysis looked both at whether the life event was more likely to result in an RRSP withdrawal (Table 6) and, if a withdrawal was made, whether it was more likely to be large (\$10,000 or over).

Results suggest that certain life events are linked to the need for additional funds, and for some people funds appear to have come from their RRSPs. It is worth looking briefly at the results for each of the defined events.

**Death of a spouse:** The death of a spouse had the greatest effect on RRSP withdrawals; those who lost a spouse were much more likely to withdraw funds. And, among persons making a withdrawal, those whose spouse had died withdrew large amounts (\$10,000 or more) more frequently than those whose spouse was still alive. The death of a spouse is a unique

### Earnings replaced by OAS/GIS and C/QPP\*

	OAS	GIS	C/QPP	Total income from OAS/GIS and C/QPP	Employment income replaced by OAS/GIS and C/QPP
Earnings of individual prior to retirement	\$			%	
\$0	5,176.32	6,151.80	...	11,328.12	...
\$5,000	5,176.32	5,526.80	1,250.00	11,953.12	239
\$10,000	5,176.32	4,901.80	2,500.00	12,578.12	126
\$15,000	5,176.32	4,276.80	3,750.00	13,203.12	88
\$20,000	5,176.32	3,651.80	5,000.00	13,828.12	69
\$25,000	5,176.32	3,026.80	6,250.00	14,453.12	58
\$30,000	5,176.32	2,401.80	7,500.00	15,078.12	50
\$35,000	5,176.32	1,776.80	8,750.00	15,703.12	45
\$40,000	5,176.32	1,501.80	9,300.00	15,978.12	40

\* For unattached individuals at 65 years old, based on rates as of January 1, 2001.

Note: OAS assumes residency requirements met, C/QPP assumes contributions made for maximum required period.

**Table 6: Population at risk with RRSP withdrawals**

Life event	Made RRSP withdrawal		Withdrew \$10,000 +	
	Life event		Life event	
	Yes	No	Yes	No
	%			
Separation or divorce – MIE	11.9	9.9	16.0	19.1
Separation or divorce – spouse of MIE	9.7	8.3	12.0	16.1
Death of spouse – MIE	31.2	10.0	55.2	18.8
Death of spouse – spouse of MIE	28.3	8.3	81.4	15.7
Involuntary job loss – MIE	10.9	9.7	29.9	14.5
Involuntary job loss – spouse of MIE	9.5	9.0	20.7	15.8
Return to school full time – MIE	10.0	9.5	16.4	17.1
Return to school full time – spouse of MIE	10.9	8.3	8.8	16.2
Buying a house – MIE	8.4	7.0	16.3	11.9
Birth of a child – MIE	12.9	9.8	8.1	19.7
Starting a business – MIE	11.5	9.1	27.8	15.6

Source: Survey of Labour and Income Dynamics, 1993-2001

Note: Spouse includes common-law partner.

MIE = major income earner.

event in that it is generally unexpected and may often occur before adequate financial planning has taken place. In such a situation, RRSPs could provide a needed or useful source of funds.

**Separation or divorce:** Although the proportion making RRSP withdrawals was higher for separated or divorced individuals, the difference from those at risk was smaller than for most of the other life events.

**Involuntary job loss, starting a business:** Involuntary job loss did not have an appreciable effect on the likelihood of making an RRSP withdrawal, while starting a business was somewhat of a factor. However, for those withdrawing money, both events were more frequently associated with large withdrawals.

**Birth of a child:** This event had little effect on the proportion of people making an RRSP withdrawal. Interestingly, the proportion of withdrawers taking out large sums was considerably lower than for those without a new baby. Those having children are generally younger, and this age group is much less likely to make large RRSP withdrawals.

**Buying a house:** Although this event had only a slight effect on the likelihood of withdrawing from an RRSP, those who did tended to withdraw larger amounts. Withdrawals under the Home Buyers Plan (HBP) were excluded. The HBP allows people to withdraw up to \$20,000 with no tax penalty to purchase a home, as long as they return the money to their RRSP within a prescribed period. However, the HBP applies only to first-time home buyers. These larger amounts may have been withdrawn by people who did not qualify for the HBP or who required amounts above the prescribed limit.

### Returning to school full time:

For the major income earner, this event had little effect on RRSP withdrawal behaviour, except if a spouse was returning to school. Student loans are the more common method of financing this activity, making it somewhat more difficult to interpret these findings. Withdrawals under the Lifelong Learning Plan were not considered here, although this program would have had little effect on the analysis since it came into effect only in 1999.

### Summary

Although RRSPs are commonly used to accumulate retirement savings, many people take money out before retirement. The practice is not restricted to lower-income groups: Over 40% of those in the middle income deciles known to have RRSPs made withdrawals between 1993 and 2001.

Approximately one-quarter of taxfilers in all age groups made withdrawals.

The likelihood of returning withdrawals to an RRSP is not high. Overall, less than 40% of those who made a withdrawal in 1993 had repaid the money by 2001. The proportion was even lower for the older age groups (22% for those 50 to 59).

From 1993 to 2001, the number of people making withdrawals increased substantially (84%). However, the median withdrawal decreased markedly (-46%), largely because of the much smaller amounts being withdrawn, particularly by those aged 20 to 39.

Close to one-fifth of those 50 to 59 who withdrew funds from their RRSPs took out relatively large amounts (\$10,000 or more). This age group was also less likely to repay these withdrawals.



Several life events were associated with an increase in the likelihood of withdrawing money from an RRSP. People who lost a spouse made a withdrawal more frequently, and a large one, and people who involuntarily lost their job or started a new business more frequently withdrew substantial sums (\$10,000 or more).

### Perspectives

#### ■ Notes

1 Other than through the Home Buyers Plan (HBP) or the Lifelong Learning Plan (LLP). The withdrawals referred to here are those on which tax is payable in the year the withdrawal is made. This would include defaults on repayments to the HBP and LLP.

2 This would exclude those who had an RRSP but did not contribute or withdraw money from it between 1993 and 2001.

3 This is assuming they had the available means and RRSP room. (RRSP room is the maximum RRSP contribution that can be deducted from income for income tax purposes.) For 2001, up to 18% of the previous year's earned income, to a maximum of \$13,500, could be contributed, less an adjustment for those belonging to an registered pension plan. Unused room from previous years can be added to this amount.

4 Median withdrawals are stated in 2001 dollars.

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# The rising profile of women academics

Deborah Sussman and Labouaria Yssaad

Over the past several decades, Canadian women have made significant inroads into many traditionally male-dominated occupations. Increased labour force participation and higher levels of education have led to women's growing presence in a wide range of occupations (Hughes 1990, 1995). One of these is full-time university teaching.<sup>1</sup>

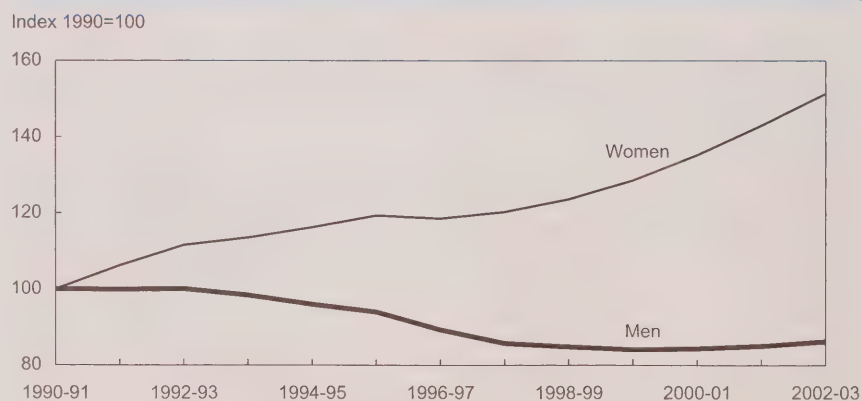
Women's representation in university faculties resonates on several levels. For one thing, women on staff provide positive role models for the growing number of female students entering university and on the verge of a career. Having women in prominent academic positions can encourage female students to consider a career in academia or other similarly well-paid, high-status, male-dominated fields. And while one does not have to be a woman to be supportive of female students, some have suggested that women make their classrooms more inclusive by using teaching styles and examples that are friendlier to their female audience. Finally, at a time when universities are increasingly expected not only to deliver high quality education, but also to contribute to the economic and social well-being of their local communities, equity concerns may prompt employers to ensure that their workforces reflect the qualified candidates available.<sup>2</sup>

The imbalance in representation at the university level appears to be decreasing as more and more women pursue educational paths that could lead to university-level positions. Indeed, between the

academic years 1960-61 and 1989-90, the number of women teaching full time at Canadian universities rose tenfold, almost doubling their share of full-time faculty from 11% to 20% (Lee 1993). Since this time, the number has continued to grow, increasing by over 50% between 1990-91 and 2002-03—more than double the growth in women's full-time employment in general. By contrast, during the same period, their male counterparts declined by 14% (Chart A), while overall full-time university staff returned to its 1990-91 level. This reduction for men combined with the growth for women served to increase women's share of full-time university teaching staff to 30% in 2002-03.<sup>3</sup>

However, women's representation at the university level has not been uniform at all ranks of academic appointment and across all fields of instruction (Lee 1993). This article looks at the growth in the number of women teaching full time at universities between 1990-91 and 2002-03, examining changes in their representation by academic rank, tenure, and field of instruction (see *Data source and definitions*).<sup>4</sup> Academic credentials, age structure, and earnings are also

**Chart A: Women have made impressive gains as full-time faculty since the early 1990s.**



Source: University and College Academic Staff System

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## Data source and definitions

The University and College Academic Staff System is an administrative database, which provides annual information on the number and characteristics of all full-time teaching staff in degree-granting institutions in Canada. It contains demographic, education program, and salary information.

The analysis covers all full-time teaching staff employed in public or private degree-granting institutions as of October 1 of the 1990-91 to 2002-03 academic years. These include universities, colleges affiliated with universities (for example, Renison College, affiliated with the University of Waterloo), and specialized colleges (for example, Nova Scotia College of Art and Design, Royal Military College, or Saint Augustine's Seminary). Teaching staff in community colleges or trade and vocational schools are excluded.

Teaching staff are referred to as university staff, and the institutions themselves are described as universities. Included are senior academic staff (for example, deans, chairpersons, directors), academic staff in teaching hospitals, visiting academic staff, and full-time research staff who have an academic rank and salary scale similar to teaching staff. Academic staff on sabbatical or maternity leave are also included.

Excluded are administrators solely responsible for administration (for example, president, vice-president, registrar, comptroller), administrative assistants, librarians, non-academic support staff, markers, demonstrators, lab assistants, graduate teaching assistants, postdoctoral fellows, and academic staff who have been hired as researchers without academic rank whose salary scales are different from teaching staff.

Part-time university teaching staff are not examined in this study. Information on this workforce is available from a previously published study (see *Part-time university faculty*).

**Salaries** are based on annual rates of pay. This includes additional payments or honoraria for administrative functions, but excludes such items as employee benefits, overtime pay and compensation for extension work. Also

excluded is employment income from other sources, such as private contracts or consultancy. Salaries of individuals who were employed full time but for less than 12 months have been adjusted to an annual rate. For staff on sabbatical leave, the annual rate of pay is the salary they would have received had they been teaching. Only teachers paid according to regular salary scales are included in the earnings analysis. Those on leave without pay and certain staff in denominational institutions are excluded.

### Academic rank

Full professor: the most senior position, always tenured.

Associate professor: mid-level with requirements varying considerably between institutions and departments. In most institutions the position is tenured, though if awarded to a non-tenured person it is usually tenure-track.

Assistant professor: entry-level, never tenured, although in most institutions the term is used for tenure-track positions.

Lecturer or instructor

Staff ranked below lecturer or instructor (for example, coaches) and ungraded staff are grouped together in the 'other' category.

### Qualifications

The following nine categories are used to designate the highest level of education attained by university staff: doctorates (for example, PhD, EdD, DS, DSW); professional degrees (excluding master's and bachelor's degrees), which consist of medical and paramedical degrees only (for example, MD, DDS, DDM, DVM); master's degrees and equivalent licences (for example, MA, MSW, MBA); graduate diplomas; bachelor's degrees (for example, LLB, BA, BSc., BEd); professional designations other than a degree (for example CA, CGA, RIA, teaching certificates); undergraduate diplomas; no degree, diploma or professional designation; unknown educational qualification.

examined. Finally, factors that could affect the sustainability of women's growing presence in academia are addressed through a look at issues related to retirement, new appointments, and the changing proportion of doctorates being awarded to women in various fields of study.

## A decade of impressive gains for women

In 2002-03, almost 11,000 women full-time faculty members were teaching at more than 70 universities (Table 1). Except for a slight drop in 1996-97, women's presence increased steadily after 1990. In contrast,

the number of men was relatively stable during the early part of the 1990s, but dropped steadily from 1993-94 to 1999-2000. This was followed by marginal increases from 2000-01 onwards. As a result of these opposing trends, full-time faculty were slightly fewer in 2002-03 than in 1990-91, but the proportion of women had increased from 20% to 30%.<sup>5</sup>

Women accounted for a significant portion of new appointments during the period.<sup>6</sup> In 1990-91, 35% of new appointments were women; by 2002-03, this had risen somewhat to 39%. The majority (62%) of new appointments were at the assistant professor rank.

**Table 1: Full-time university faculty**

	1990-91	1994-95	1998-99	2002-03
<b>Total - All ranks</b>	<b>36,430</b>	<b>36,400</b>	<b>33,670</b>	<b>36,050</b>
Men	29,300	28,120	24,860	25,270
Women	7,120	8,280	8,800	10,780
% women	19.6	22.7	26.2	29.9
<b>Full professor</b>	<b>13,680</b>	<b>14,850</b>	<b>13,870</b>	<b>13,930</b>
Men	12,640	13,270	11,970	11,530
Women	1,040	1,580	1,900	2,390
% women	7.6	10.7	13.7	17.2
<b>Associate professor</b>	<b>12,630</b>	<b>12,770</b>	<b>12,010</b>	<b>11,680</b>
Men	10,160	9,670	8,520	7,790
Women	2,470	3,100	3,490	3,890
% women	19.5	24.3	29.1	33.3
<b>Assistant professor</b>	<b>7,730</b>	<b>7,300</b>	<b>6,300</b>	<b>8,650</b>
Men	5,170	4,490	3,630	5,130
Women	2,570	2,820	2,660	3,520
% women	33.2	38.6	42.3	40.7
<b>Lecturer, instructor or other</b>	<b>2,380</b>	<b>1,480</b>	<b>1,490</b>	<b>1,800</b>
Men	1,340	700	740	820
Women	1,050	780	750	980
% women	43.9	52.6	50.4	54.6

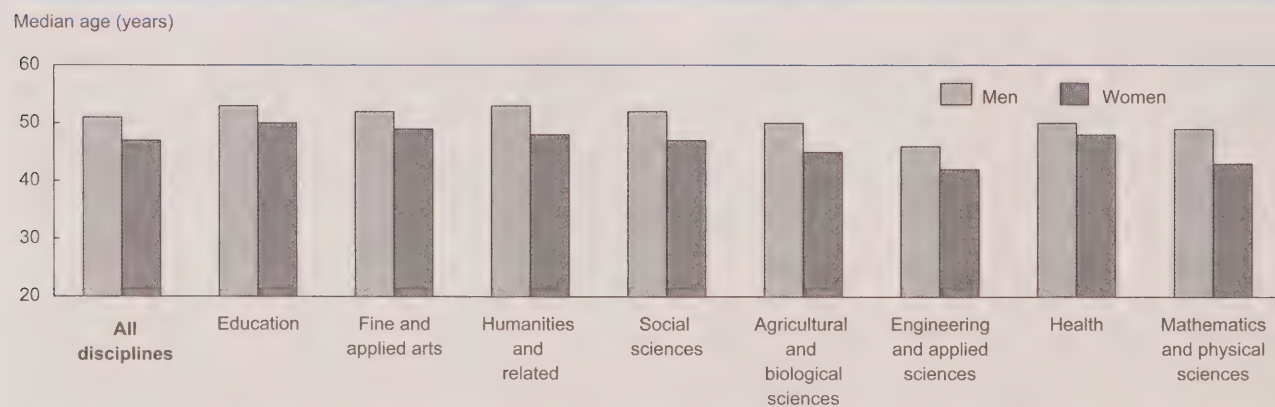
Source: University and College Academic Staff System

These were more evenly distributed between men and women (59% versus 41%) than appointments at higher levels. For example, at the full professor level (8% of all appointments), only 15% of new appointments were women, a marginal improvement from 12% in 1990-91 (data not shown).

### Faculty women younger than their male colleagues

The age structure of university faculty is comparatively older than the workforce in general, with a median age of 49 years in 2002-03.<sup>7</sup> This may reflect the long years of study required to meet the necessary qualifications for teaching at the university level, as well as the lingering effects of deep funding cuts by provincial governments that hindered the hiring of young people during the early 1990s (Lewington 1995). Nevertheless, female faculty members tended to be younger than their male colleagues, with a median age of 47 versus 51 (up from 44 and 48 in 1990-91).

This age differential held in all fields of instruction (Chart B). The youngest women were in engineering and the applied sciences (median age of 42), and mathematics and the physical sciences (43). The corresponding median ages for men were 46 and 49. Women tended to be older in the more traditional fields, such as education (50), fine and applied arts (49), the humanities (48) and health (48).

**Chart B: Faculty women tend to be younger than their male colleagues.**

Source: University and College Academic Staff System, 2002-03



### Strengthened presence in both traditional and non-traditional disciplines

The vast majority of female full-time faculty members are clustered in certain disciplines. In 2002-03, the social sciences accounted for the highest proportion of both women (28%) and men (26%). But, as has been the case for decades, women remain more concentrated in another three of the eight fields studied—namely, health (mainly in nursing and rehabilitation medicine), humanities, and education. Together these accounted for 52% of women versus 35% of men on full-time faculty. In contrast, only a minority of women (9%) taught in engineering and applied sciences, or mathematics and physical sciences (compared with 28% of men).

What has improved over time, however, is the share of women in all fields of instruction. From 1990-91 to 2002-03, the proportion of full-time faculty positions they held increased dramatically and steadily in all disciplines, including the non-traditional fields of engineering and applied sciences (from 3% to 10%)

and mathematics and physical sciences (from 7% to 13%) (Chart C). But the process is slow, as women entering academia need time to advance through the system (Chen 2004).

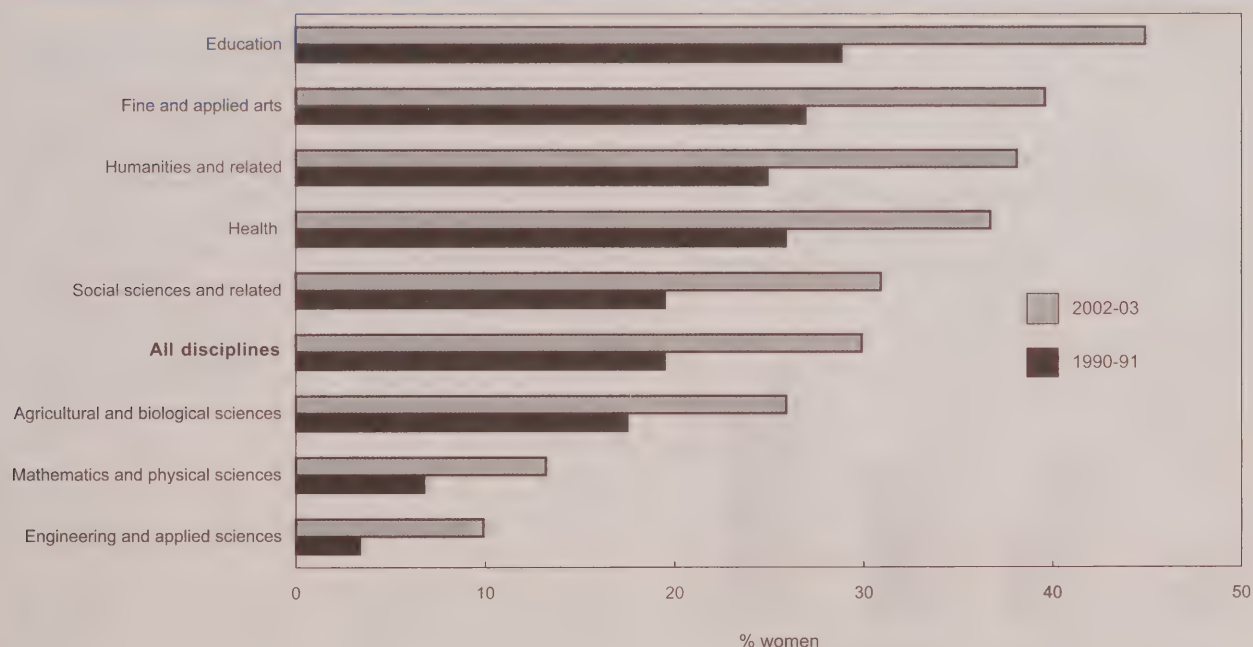
### Notable gains in tenure status and academic rank

Women made notable gains in tenure status over the period.<sup>8</sup> Only 14% of all tenured staff were women in 1990-91, but this had almost doubled to 26% by 2002-03. The comparative figures for tenure-track positions were 34% and 38% respectively.<sup>9</sup>

Almost half of all male tenured faculty were 55 or older, compared with only one-third of their female colleagues. Most (60%) tenured women were between 40 and 54 years of age. Few of either sex were below 40.

Related to tenure (and perhaps a more telling indicator of status) is the presence of women within the different academic ranks: full professor; associate professor; assistant professor; and lecturer, instructor

**Chart C: Women have strengthened their presence in all disciplines.**



Source: University and College Academic Staff System

or other. Although at successively higher ranks women continued to hold a declining portion of academic posts, their relative standing improved greatly during the 1990s (Chart D). While only 8% of all full professors were women in 1990-91, the proportion had more than doubled to 17% by 2002-03.

Similarly, only one in five associate professors in 1990-91 were women; by 2002-03 this had increased to one in three. Women's presence grew in the lower ranks as well, rising to 41% of all assistant professors (from 33%) and 55% of all lecturers, instructors and other faculty (from 44%). These gains were seen in all disciplines, including those traditionally dominated by men.

In spite of gains made over the past decade, women continue to have a weaker presence at the upper academic ranks and among tenured faculty generally. This partly reflects the time it takes to reach these senior levels. Women have entered university in large numbers only relatively recently (Lee 1993) and

**Table 2: Full-time faculty by age and rank\***

	Both sexes	Men	Women	Incidence of women	Distribution of	
					Men	Women
<b>Less than 40</b>					%	
All ranks	6,660	4,280	2,390	36	100	100
Full professor	120	100	20	19	2	1
Associate professor	1,380	960	420	30	22	17
Assistant professor	4,630	2,950	1,680	36	69	70
Lecturer, instructor or other	540	270	270	51	6	11
<b>40 to 54</b>						
All ranks	17,610	11,660	5,950	34	100	100
Full professor	6,080	4,830	1,250	21	41	21
Associate professor	7,140	4,550	2,590	36	39	44
Assistant professor	3,480	1,900	1,580	45	16	27
Lecturer, instructor or other	910	380	530	58	3	9
<b>55 and over</b>						
All ranks	11,740	9,320	2,420	21	100	100
Full professor	7,720	6,600	1,120	15	71	46
Associate professor	3,160	2,280	880	28	25	36
Assistant professor	510	270	250	48	3	10
Lecturer, instructor or other	350	170	180	51	2	7

Source: University and College Academic Staff System, 2002-03

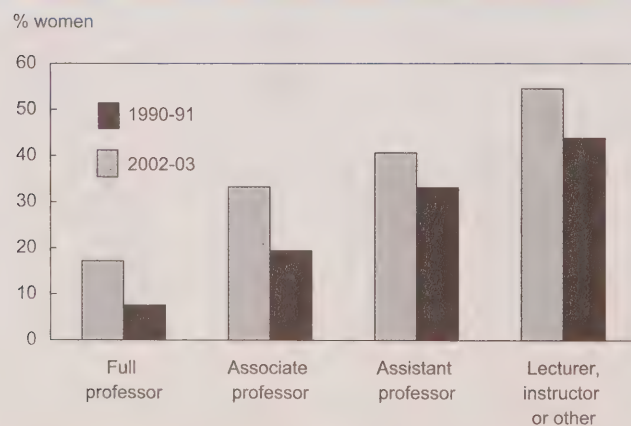
\* May not add up to totals in other tables because of missing values for age.

thus are younger, on average, than their male colleagues. Indeed, when age is factored into the analysis of women's presence by rank, its importance becomes more apparent (Table 2).

In 2002-03, women accounted for 36% of all full-time faculty under age 40, 34% of those between 40 and 54, but only 21% of those 55 and older. At the full professor level, however, only 19% under 40 were women, as were 21% of those between 40 and 54, and 15% of those 55 and older. Similarly, at the associate professor level, women made up only 30% of those under 40, 36% of those between 40 and 54, and 28% of those 55 and older. The lower proportions of women under 40 in these upper academic ranks (compared with women aged 40 to 54) may be related to some being absent from the pool of qualified female candidates because of family responsibilities.

Another aspect of gains among women academics is the rising proportion of female faculty members who are full professors or associate professors (and a corresponding decline at the lower levels of assistant professor and lecturer). In 1990-91, only 15% of women working full time held full professorships, while 35% held associate professorships. By 2002-03, the proportions stood at 22% and 36% respectively, for a total of 58% in the upper echelons. While not yet

**Chart D: Women have made notable gains in academic rank.**



Source: University and College Academic Staff System



at the high concentration of their male colleagues (nearly 80% of whom were full or associate professors in 2002-03), the situation for women appears to be slowly improving (Chart E).

**Chart E: A rising proportion of female faculty members are in the upper ranks.**



Source: University and College Academic Staff System

A closer look at academic rank also reveals important age distinctions between the sexes, shedding more light on current trends. For example, 7 in 10 women under 40 in 2002-03 were assistant professors, similar to their male counterparts; a further 18% had attained the rank of associate or full professor, as had 24% of the men. However, significant differences were evident in older age groups, particularly at the full professor level: 41% of men but only 21% of women aged 40 to 54 were in this category, as were 71% of men but only 46% of women 55 and over (Table 2).

### Educational qualifications rising

As competition for jobs in the general economy has intensified, academic credentials have increased. This is also true in the academic labour market, where more and more full-time faculty members hold doctorates.

In 2002-03, 81% of all male faculty members held a doctorate, as did 72% of their female counterparts—a significant change from 1990-91 when the figures were 73% and 56%. Virtually all remaining faculty members held either a master's (nearly 20% of women and 10% of men), or a professional degree (5% of women and 6% of men).<sup>10</sup>

The qualifications gap between men and women appears to be related to academic rank. The discrepancy was much smaller in the upper ranks—86% of men who were full professors held doctorates, as did 83% of women; similarly, 81% of men and 80% of women who were associate professors held doctorates. At each level, the proportions went up over the decade (Table 3).

However, when looked at another way, a different picture emerges. While almost half of all male faculty members with doctorates were full professors, only 26% of their female counterparts held such positions in 2002-03 (Chart F).

**Table 3: Full-time faculty with doctorates**

	Men		Women	
	1990-91	2002-03	1990-91	2002-03
	% with doctorate			
<b>All ranks</b>	<b>73</b>	<b>81</b>	<b>56</b>	<b>72</b>
Full professor	84	86	81	83
Associate professor	73	81	66	80
Assistant professor	62	79	54	70
Lecturer, instructor or other	20	29	14	18

Source: University and College Academic Staff System

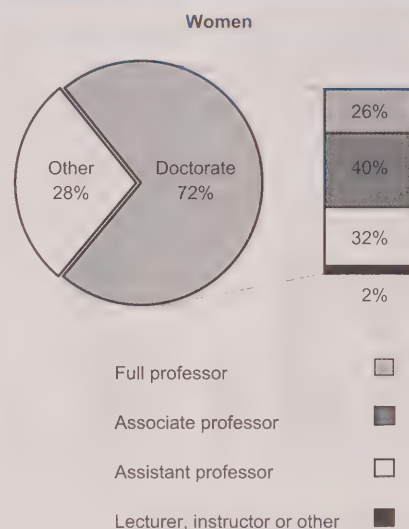
This represented some improvement for women since 1990-91, while the situation for men remained unchanged. By contrast, 40% of female faculty members with doctorates were associate professors and another 32% were assistant professors. The corresponding proportions for men were 31% and 20%. In short, women with doctorates tended to be found in the lower ranks, with little change in the standings since 1990-91.

This seems to suggest a lack of upward mobility for women, particularly to full professor. However, other factors may also be at work. Firstly, women's lack of seniority may reflect their relatively recent entrance in large numbers into the academic labour market, which would tend to make them

younger on average. Indeed, the proportion of women with doctorates who had reached the full professor level by 2002-03 increased dramatically with age, from 1% among those under 40 to 53% among those 55 and older; the corresponding proportions for their male counterparts were 3% and 75% (Table 4).

Secondly, women's tendency to experience more work interruptions (because of maternity leave or periods of part-time employment while raising children), particularly during the earlier part of their career, may also influence their professional experience and opportunities for promotion (see *Do babies matter?*). Differences in time spent on research activities and in research productivity may be potential reasons for women's

**Chart F: Women with doctorates: underrepresented at full professor level, over-represented at assistant professor.**

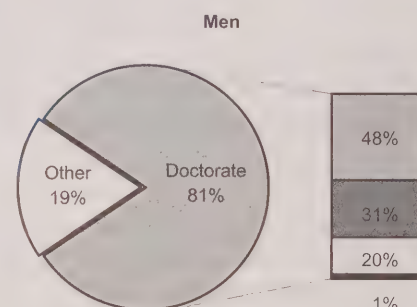


**Table 4: Full-time faculty with doctorates by age and rank, 2002-03\***

	Both sexes	Men	Women	Distribution of	
				Men	Women
				%	
<b>Under 40</b>					
All ranks	5,220	3,500	1,720	100	100
Full professor	110	90	20	3	1
Associate professor	1,250	880	370	25	21
Assistant professor	3,770	2,470	1,300	71	75
Lecturer, instructor and other	90	50	40	2	2
<b>40 to 54</b>					
All ranks	13,650	9,430	4,230	100	100
Full professor	5,240	4,200	1,040	45	25
Associate professor	5,770	3,700	2,070	39	49
Assistant professor	2,430	1,410	1,030	15	24
Lecturer, instructor and other	210	120	90	1	2
<b>55 and over</b>					
All ranks	9,350	7,580	1,770	100	100
Full professor	6,590	5,660	930	75	53
Associate professor	2,360	1,700	650	22	37
Assistant professor	300	150	140	2	8
Lecturer, instructor and other	110	70	40	1	2

Source: University and College Academic Staff System

\* May not add to totals in other tables because of missing values for age.



Source: University and College Academic Staff System, 2002-03

continued disproportionate absence at the higher ranks, particularly full professor (Toutkoushian 1999; Donaldson and Emes 2000<sup>11</sup>).

### Women earn less than their male colleagues

In 2002-03, the median salary of female faculty members was some \$13,000 lower than that of their



### Do babies matter?

A recent American study, *Do babies matter? The effect of family formation on the lifelong careers of academic men and women*, found that babies not only matter a great deal, but their timing is also important (Mason and Goulden 2002). The findings showed a consistent and large gap in achieving tenure between women who had started a family within five years after completing their doctorate compared with men in a similar position. This gap persisted across all disciplines and types of institutions. For most academics, these years represent a critical time in career development accompanied by high demands and high job insecurity.

Similarly, a Canadian study of the workforce in general found a wage advantage associated with delayed motherhood (Drolet 2002b). Again, this advantage arose, at least in part, because the acquisition of job-related skills and significant wage growth are concentrated at the start of a career, which may coincide with decisions regarding marriage and children.

male colleagues. With university salaries scaled according to rank, however, much of the difference can be attributed to women being disproportionately in the lower ranks. When the median salaries of men and women of equal academic rank are considered, the difference narrows substantially—from \$6,100 at the full professor level (where women earned 94% of men's salaries in 2002-03) to \$2,600 (96%) at the assistant professor level (Table 5).

The principal subject taught also affects median salary differentials. In 2002-03, male-female differences in median salaries were lower among faculty members in education (where men's median earnings were \$7,300 higher) and fine and applied arts (\$9,500 higher)—disciplines with higher concentrations of women and lower median salaries generally. By contrast, greater earnings differentials were noted in social sciences (\$14,000), mathematics (\$13,400), and engineering (\$12,800)—disciplines with the highest median salaries and comparatively lower proportions of women. These differences likely arise, in part, because women tend to be younger in these fields, and therefore less likely to have attained senior positions or to be at the top of their salary scale. Moreover, in recent years, universities have introduced 'market supplements' to boost salaries in areas where they have not been competitive with the private sector—for example, engineering, computer sciences, business and law (Schmidt 2004).

A similar picture emerges when academic rank and principal subject taught are considered together. For example, among female full professors in education, where the highest percentage of women of that rank are found, the earnings differential was \$2,500 in 2002-03. By contrast, much larger differences were found among full professors in engineering (\$9,500) or mathematics (\$7,800), disciplines having by far the lowest percentages of women at the full professor level. The persistence of lower median earnings among female faculty, even within the same academic rank and field, may be explained in part by differences in age, experience and seniority (Lee 1993).<sup>12</sup>

Another factor related to academic salaries is the federal government's Canada Research Chairs program, launched in 2000 to create 2,000 elite professorships with top salaries (Schmidt 2004). So far, almost 70% of these positions have been filled, the vast majority (80%) by men.<sup>13</sup> It is not known how this program will affect salary differences.

### Women's increased presence in academia likely to continue

Women's growing presence in academia is likely to continue. Opportunities for the recruitment and advancement of female candidates are expected to be created from two important sources—the growing pool of women with doctorates and the retirement of senior male faculty.

As regards the former, women have made significant strides in obtaining the education required to pursue an academic career (Toutkoushian 1999). Indeed, the number of doctorates being awarded to women rose significantly between 1989-90 and 1999-2000, and their share of doctoral degrees climbed steadily after 1993-94 (Table 6).<sup>14</sup>

Despite these gains, some disparities remain in women's representation among doctoral recipients across the different disciplines. For example, in 1999-2000, women accounted for more than two-thirds of all doctorates awarded in education; about half of those in the social sciences, the humanities, and fine and applied arts; and almost half (45%) in health. By contrast, they continue to be poorly represented in the traditionally male-dominated fields. Indeed, women made up about one-fifth of all doctorates awarded in mathematics and the physical sciences, and only 13% of those in engineering and the applied sciences.

**Table 5: Median salary by sex, rank and field of instruction**

	Both sexes	Men	Women	Difference	Earnings ratio (women/ men)
			\$		%
<b>Total</b>	<b>83,350</b>	<b>87,210</b>	<b>73,990</b>	<b>13,220</b>	<b>85</b>
<b>Academic rank</b>					
Full professor	99,390	100,370	94,270	6,100	94
Associate professor	81,360	82,520	78,670	3,850	95
Assistant professor	63,310	64,400	61,780	2,620	96
Lecturer, instructor or other	57,630	59,450	56,090	3,360	94
<b>Principal subject taught</b>					
Education	80,230	83,910	76,580	7,330	91
Full professor	96,350	97,270	94,790	2,480	97
Associate professor	81,370	82,270	80,230	2,040	98
Assistant professor	62,650	62,650	62,650	0	100
Lecturer, instructor or other	61,230	61,140	63,080	-1,940	103
Fine and applied arts	75,770	79,530	70,050	9,480	88
Full professor	94,400	96,130	92,610	3,520	96
Associate professor	78,270	80,000	76,290	3,710	95
Assistant professor	57,260	58,240	55,580	2,660	95
Lecturer, instructor or other	52,280	55,250	51,680	3,570	94
Humanities and related	76,240	81,980	69,050	12,930	84
Full professor	96,160	97,290	92,270	5,020	95
Associate professor	77,890	80,280	75,740	4,540	94
Assistant professor	56,620	56,920	56,460	460	99
Lecturer, instructor or other	50,960	49,740	51,920	-2,180	104
Social sciences	86,200	90,330	76,300	14,030	84
Full professor	99,900	101,420	94,270	7,150	93
Associate professor	83,390	84,730	79,520	5,210	94
Assistant professor	64,320	65,840	62,860	2,980	95
Lecturer, instructor or other	57,180	58,180	55,720	2,460	96
Agricultural and biological sciences	83,970	87,250	74,770	12,480	86
Full professor	96,730	97,580	93,850	3,730	96
Associate professor	78,650	80,050	76,130	3,920	95
Assistant professor	64,100	64,620	63,970	650	99
Lecturer, instructor or other	56,870	62,060	55,310	6,750	89
Engineering and applied sciences	87,780	89,140	76,300	12,840	86
Full professor	103,250	103,900	94,380	9,520	91
Associate professor	82,650	82,900	81,710	1,190	99
Assistant professor	70,430	70,650	67,840	2,810	96
Lecturer, instructor or other	66,000	67,000	61,370	5,630	92
Health	82,500	87,050	75,000	12,050	86
Full professor	101,840	102,660	98,220	4,440	96
Associate professor	81,440	81,960	80,330	1,630	98
Assistant professor	65,000	65,350	64,000	1,350	98
Lecturer, instructor or other	57,750	55,010	58,070	-3,060	106
Mathematics and physical sciences	86,360	88,260	74,850	13,410	85
Full professor	100,270	100,870	93,040	7,830	92
Associate professor	82,000	82,460	78,320	4,140	95
Assistant professor	65,000	65,000	65,000	0	100
Lecturer, instructor or other	63,000	63,140	61,740	1,400	98

Source: University and College Academic Staff System, 2002-03



**Table 6: Earned doctorates**

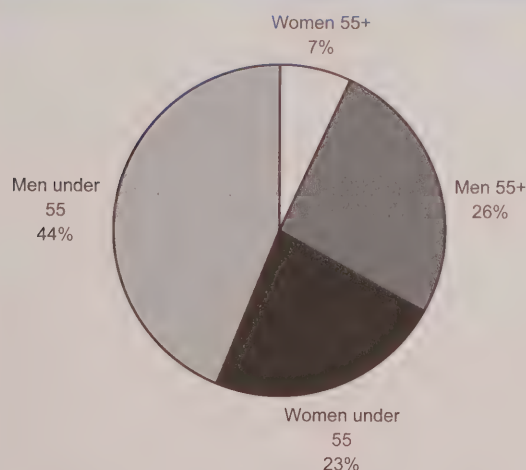
	1989-90	1991-92	1993-94	1995-96	1997-98	1999-2000
<b>Both sexes</b>	<b>2,550</b>	<b>3,030</b>	<b>3,440</b>	<b>3,820</b>	<b>3,850</b>	<b>3,710</b>
Men	1,760	2,100	2,430	2,550	2,470	2,200
Women	790	930	1,010	1,280	1,380	1,510
% women	31	31	29	33	36	41

Source: University Student Information System

Nevertheless, the latter discipline indicates a marked improvement since 1989-90, when the proportion was a mere 5%.

The retirement of faculty members would appear to be a pressing concern for universities, since one in three academics was 55 or older in 2002-03 (Chart G). The vast majority were men, and accounted for over one-quarter of all employed faculty that year. In comparison, women 55 and over made up only 7% of the academic workforce.

A related issue is mandatory retirement, usually at age 65. This policy, which varies from province to province, may affect the timing of retirement of faculty

**Chart G: In 2002-03, faculty men were closer to the traditional retirement age of 65.**

Source: University and College Academic Staff System

members, with important implications for job openings, promotion opportunities, and ultimately the male-female distribution in universities (see *Mandatory retirement*).

## Summary

Women have increased their presence among full-time university faculty during a period of shrinking public funding, rising enrolments, and increasing tuition costs. This trend has been fuelled by the rising educational attainment of women generally, as well as a growing academic workforce reaching retirement age that consists mainly of men. As a result of these dynamics, close to 11,000 women were full-time faculty members of Canadian universities in 2002-03, accounting for 30% of all full-time academics—a notable improvement from about 20% only a decade earlier.

Women strengthened their presence in both traditional and non-traditional disciplines and made notable gains in tenure status and academic rank. Their median salaries remain below those of their male colleagues, though the gap generally narrows when academic rank and field of study are taken into account.

Educational qualifications have increased for both sexes, with an increasing proportion of full-time university faculty members at all academic ranks holding doctorates. Nevertheless, women with doctorates remain underrepresented at the full professor level. The relatively recent entrance of women in large numbers into the academic workforce may be part of the explanation. These women tend to be younger and have not had time to rise to the rank of full professor. Women academics also tend to experience more work interruptions than men (related to maternity leave and childcare), they may dedicate less time to research generally, and they are more willing to accept part-time or instructor-level employment.

As of 2002-03, just over one in four Canadian academics were men aged 55 and over. The anticipated retirement of the majority of them in the next decade or so—in conjunction with the growing pool of women with doctoral degrees—bodes well for the future hiring of women, their rising representation at all levels of academe, and their continued advancement into the higher ranks. Indeed, women's increased presence in the groups that feed into senior academic positions should lead to continued improvement in their representation in the years ahead (Statistics Canada 2003).

## Mandatory retirement

In 1990, the Supreme Court of Canada issued a landmark ruling on mandatory retirement in upholding the practice in a case involving university professors. The court stated that although mandatory retirement is discriminatory, it is a reasonable limit on an individual's rights. Specifically, the Court concluded that:

[Mandatory retirement] ensures continuing faculty renewal, a necessary process to enable universities to be centres of excellence. Universities need to be on the cutting edge of new discoveries and ideas, and this requires a continuing infusion of new people.

— *McKinney v. University of Guelph*,  
[1990] 3 S.C.R. 229

University administrations favour mandatory retirement policies since they facilitate planning and help anticipate staffing needs, which are premised on the expectation that the employee will retire at an established age. Without mandatory retirement, its supporters charge that payroll, benefit and pension costs would increase.

On the other hand, faculty members in particular oppose mandatory retirement. Aside from the infringement on their freedom of choice, they fear it to be a means by which universities can save money at the expense of their most experienced members—those whose experience and reputations are necessary to attract and supervise graduate students, mentor

junior faculty members, and recruit senior scholars for prestigious Canada Research Chair positions. As well, mandatory retirement can pose an obstacle to teaching staff, particularly women who have begun their academic careers later in life or whose careers have been shortened by interruptions to raise children. These individuals have likely accumulated smaller pensions as a result, and may be forced to retire at what could be the peak of their careers (Tamburri 2003).

In 2002, only 2% of full-time academics in Canadian universities were aged 65 or older. Proportions in two of the four provinces without mandatory retirement, however, were above average—5% in Manitoba and 4% in Quebec. On the other hand, in five of the six provinces where employers have recourse to mandatory retirement, rates were 1% or less (except in Saskatchewan, where the University of Saskatchewan has a mandatory retirement age of 67). Moreover, according to a forthcoming study, these differences may have widened in recent years. Nevertheless, even in the absence of mandatory retirement, it appears that only a small fraction of academics are likely to keep working much beyond age 65 (Worswick forthcoming).

In all provinces, faculty members working past 65 were overwhelmingly men.

## Provisions governing mandatory retirement

Jurisdiction	Provisions	Full-time faculty 65 or older in 2002 (% men)
Federal	Not discriminatory if the person has reached the normal age of retirement for employees in the same type of work.	2% (88%)
British Columbia	Age 65 if required by employer.	1% (87%)
Alberta	None.	2% (84%)
Saskatchewan	Age 65 if required by employer.	3% (89%)
Manitoba	None.	5% (90%)
Ontario	Age 65 if required by employer. Legislation to end restriction currently being considered.	1% (90%)
Quebec	None.	4% (87%)
New Brunswick	Can be set under terms of a retirement or pension plan. Otherwise, employees obliged to retire may file a complaint under provincial human rights legislation.	Less than 1% (F)
Nova Scotia	Age 65 if required by employer; however, all employees must be treated equally.	Less than 1% (85%)
Prince Edward Island	None.	F
Newfoundland and Labrador	Can be set under terms of a retirement or pension plan.	Less than 1% (80%)

Source: Human Resources and Skills Development Canada



## Part-time university faculty

Because of incomplete information on part-time faculty, summary results are provided from a previously published study where missing data were imputed using a specific regression procedure based on reported information (Omiecinski 2003). That study used the University and College Academic Staff Survey—Part-time staff. However, it was conducted only for the academic years 1990-91 to 1997-98. Information collected for each part-time teacher was similar to that collected for full-time faculty (see *Data source and definitions*).

Between 1990-91 and 1997-98, Canadian universities relied increasingly on part-time teaching staff, whose ranks increased 10% from 25,700 to 28,200. Part-time faculty members made up 46% of all faculty members in 1997, up from 41% seven years earlier.

In 1997-98, women accounted for a larger proportion of part-time (42%) than full-time (26%) faculty members. By discipline, the ratio of full-time men to women ranged from a low of about 2 to 1 in education to a high of 12 to 1 in engineering and the applied sciences. Among part-timers,

these ratios ranged from about 1 to 1 in fine and applied arts to about 5 to 1 in engineering and applied sciences. Full-time men outnumbered their female colleagues by about 9 to 1 in mathematics and the physical sciences, while the corresponding ratio for part-time faculty was 4 to 1. Part-time men outnumbered women in all teaching fields except nursing.

Part-time faculty tend to be younger. In 1997, 37% were below the age of 40, compared with only 17% of full-time faculty. Similarly, only 30% of part-time faculty were 50 or older, versus 50% of those working full time. Women part-timers tended to be younger than their male counterparts—41% of women versus 34% of men were under 40.

In 1997, full-time faculty members had higher levels of education than their part-time colleagues: 82% held a doctorate and 15% a master's compared with 42% and 38% of part-timers. Male part-time faculty members also had higher levels of education than their female colleagues: 50% had a doctorate compared with only 29% of women.

## Perspectives

### ■ Notes

1 Although women have long been the majority in the teaching professions, their share diminishes drastically at successively higher levels of instruction (Lee 1993). In 2000, women made up 61% of all full-time educators. However, 80% of elementary school and kindergarten teachers were women, compared with 50% of secondary school teachers, 45% of college and vocational instructors, and only 29% of university professors.

2 Donaldson and Emes (2000) argue that women's participation rates within academic ranks and their frequency of administrative appointments are also ways in which women can gain the authority necessary to effect change—change being the promotion and maintenance of gender equity and sensitivity in academic institutions and the wider community.

3 It has been suggested that the decline in male professors may be caused partly by some men with doctorates choosing the more attractive financial option of working for private industry or as independent consultants as opposed to university teaching. In 2000-01, for example, 22% of men with doctorates were professionals in natural and applied science occupations, up from 15% in 1990-91; by contrast, 29% were university professors in 2000-01, down from 31% in 1990-91. Private sector options may, however, be less stable and involve travel and long hours, making them less attractive to women with similar academic qualifications.

Nevertheless, the percentage of women with doctorates working in the natural and applied science professions also increased during this period (from 8% to 11%).

4 For reasons of data availability, the focus of this study is on full-time university faculty only. See *Part-time university faculty* for a discussion of this group.

5 Within this time frame, every province saw a reduction in the number of male faculty members and an increase in both the number and proportion of women. Prince Edward Island, British Columbia, Alberta, Quebec and Saskatchewan, however, reported increases in the overall number of full-time university faculty from 1990-91 to 2002-03.

6 New appointments refer to a specific university. These individuals may or may not have held a position at another university.

7 In 2001, the median age of the core working-age population (20 to 64) was 41.3 years, up from 38.1 years a decade earlier. This represented the biggest 10-year increase since 1921.

8 Tenure grants professors the right not to be fired without cause after an initial probationary period—the justification being that this provides academic freedom by preventing the firing of an individual for openly disagreeing with authorities or popular opinion. However, opponents of tenure charge that it also removes incentives for

productivity. In most cases, tenure is not awarded upon hiring. Rather, a position is designated as eligible for tenure or 'tenure-track.' The criteria for promotion involve a combination of research, teaching and community service (that is, providing expert advice), as well as intellectual and professional development. The weight given to each component varies among faculties, departments and disciplines. Typically, a candidate will be employed for about five years before a decision is taken on tenure, but this practice also varies from university to university.

9 Information on tenure status is not available for staff in Quebec universities and is not included in these calculations.

10 Faculty members in some disciplines are less likely to have obtained a doctorate. For example, those in engineering and computer science may have obtained, at most, a master's degree in engineering, science or a related discipline; those in medicine and nursing, an MD (medical doctor) or RN (registered nurse); social work, an MSW (Master of Social Work); commerce and management, an MBA (Master of Business Administration); law, an LL.M (Master of Laws).

11 Donaldson and Emes found that women academics collaborate more frequently than their male colleagues, and are much less likely to be single or first authors than one of several contributing authors. This assessment of research contribution was based on an analysis of articles published and books reviewed by the *Canadian Journal of Higher Education* between 1987 and 1997 (32 issues).

12 The female-to-male earnings ratio for full-year, full-time workers stood at 71% in 2001. However, women working full time tend to work fewer hours per week than men—38.7 hours versus 42.5 hours in 2001. Over the course of a year, this difference can amount to as much as five weeks of work. Accounting for the difference reduces the earnings gap (Galarneau and Earl 1999). The female-to-male earnings ratio for doctorate holders is also an important comparative indicator, given the link between earnings and education. In 2000, this ratio stood at 79%, indicating that a higher education helps close the differential. Earnings or wage gaps in the strictest sense refer to what can be explained by sex alone, after all other contributing factors have been accounted for using a multivariate analysis. Such an analysis was not performed for this study. For further discussion, see Drolet (2002a).

13 The most lucrative of these positions are known as 'Tier 1 Chairs,' and are awarded to outstanding researchers acknowledged by their peers as world leaders in their field. For each Tier 1 Chair, the university receives \$200,000 annually for seven years. As of November 2004, women accounted for a minority (17%) of these positions. Tier 2 Chairs are granted to exceptional emerging researchers, who are acknowledged by their peers as having the potential to become leaders in

their field. They are worth \$100,000 annually over five years, and to date only 22% have been awarded to women. For more information on the Canada Research Chairs program, see their Web site at [www.chairs.gc.ca/web/program/index\\_e.asp](http://www.chairs.gc.ca/web/program/index_e.asp).

14 Universities are the leading employment destination of persons with doctorates. Indeed, in 2000-01, about one in three doctorate holders was a university professor; this held true for both men and women. Teaching assistants, college and vocational instructors, and secondary and elementary teachers accounted for another 10%. Other occupations where people with doctorates are also concentrated include professionals in natural and applied sciences (for example, chemists, biologists, computer scientists) (19%); senior managers (11%); health professionals (for example, physicians) (6%); policy and program officers, researchers and consultants (5%); and psychologists (4%). Differences between men and women were observed in some of these occupations. In particular, psychology is a more popular option among women with doctorates, while professional occupations in the natural and applied sciences are more typical of men.

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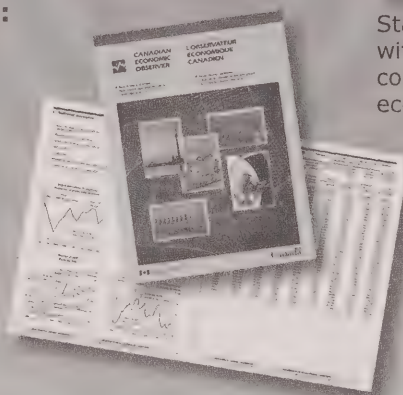
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# Duration of non-standard employment

*Costa Kapsalis and Pierre Tourigny*

Over 6 in 10 working Canadians are employees with permanent, full-time jobs—the traditional standard form of employment in this country. The rest have part-time or temporary jobs, or are self-employed. While many workers deliberately choose non-standard forms of employment—for example, mothers working part time until their children are old enough to attend school, or older workers reducing their workweeks as a transition into retirement—many others would opt for permanent, full-time employment if it were available.

The incidence of non-standard work has been rising in recent years (Vosko et al. 2003). This has drawn more attention to some of the possible negative consequences of non-standard work, including employment insecurity, lower earnings, and limited or no access to employer benefits (such as pension plans) or social programs (such as Employment Insurance).

The economic consequences of non-standard work depend greatly on whether the situation is short-term or long-term. Hence, a longitudinal perspective is crucial.

This article examines the duration of non-standard jobs using the Survey of Labour and Income Dynamics (SLID) from 1999 to 2001. It looks at three distinct groups of non-standard workers: the self-employed (with and without paid help), employees with permanent part-time jobs, and temporary employees who work either full or part time (see *Data source and definitions*).

## Extent of non-standard work

In 2001, about 38% of all employed Canadians were non-standard workers in their main job: 15% worked in temporary jobs, 14% were self-employed, and 9%

were permanent part-time employees. Among the self-employed, 9% were own-account workers, and 5% had employees (Table 1). In addition, about 1 in 10 employees in permanent, full-time paid positions reported some non-standard employment. This was the result of multiple jobholding or switching from one type of job to another during the year.<sup>3</sup>

## Economic consequences

A primary concern regarding non-standard work is its potentially adverse financial consequences. For example, persons in temporary or part-time jobs work fewer hours, on average, than standard workers, and have lower hourly and annual earnings (Table 2). In 2001, temporary part-time workers worked less than 800 hours (compared with 1,961 hours for standard workers), and reported hourly earnings of only \$11.58 (versus \$18.89), and annual earnings of \$10,900 (versus \$40,900).<sup>4</sup>

Non-standard workers were also more likely to experience unemployment during the year—particularly temporary full-time workers (41% in 2001). They were also less likely to receive Employment Insurance (EI) benefits (except temporary full-time workers, half of whom received benefits).

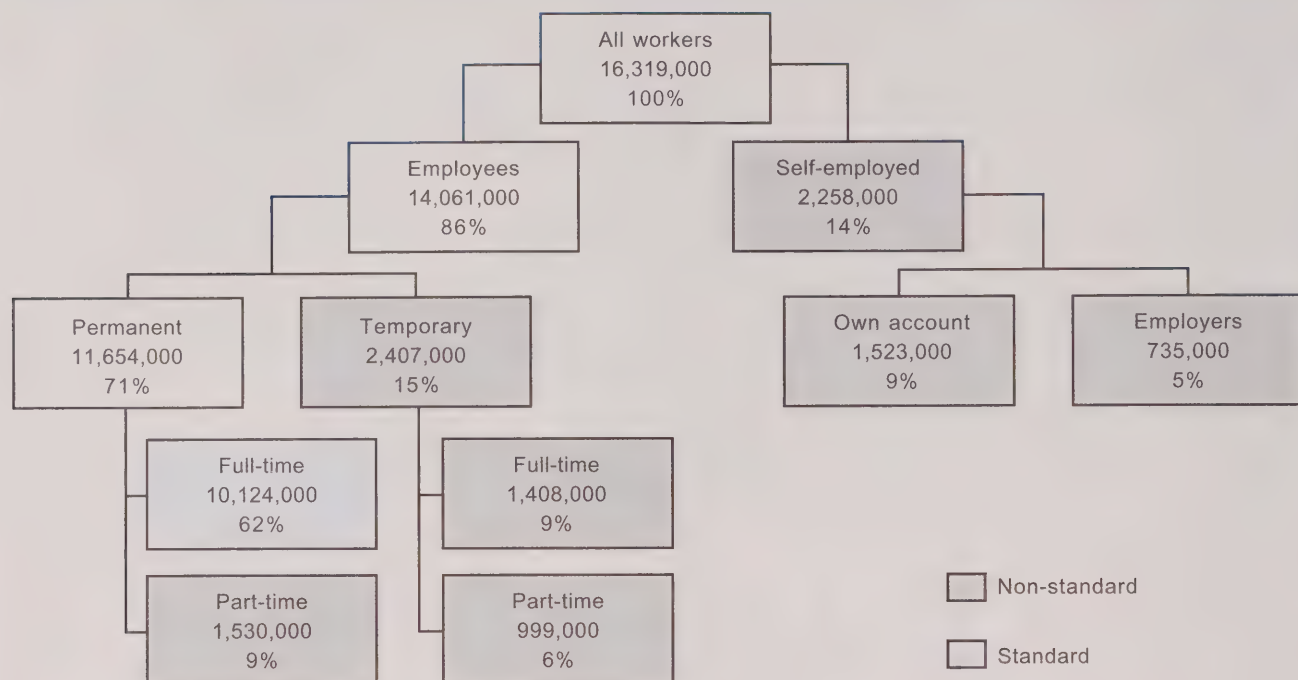
In terms of average family income, own-account workers were the worst off (\$52,500 in 2001); they also experienced the highest incidence of low income (15%).<sup>5</sup> Employers reported the highest average family income (almost \$77,000), followed by standard workers (just over \$64,000). Only 3% of standard workers lived in low-income families, however, compared with 8% of employer families.<sup>6</sup>

## Persistence

The duration, or persistence, of non-standard work is of particular interest. Although some people prefer to work at temporary or part-time jobs for extended periods, or choose to be self-employed, others see such jobs as mere stepping stones to permanent full-time

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**Table 1: Classification of workers aged 16 to 69, by type of main job**

Source: Survey of Labour and Income Dynamics, 2001

work. Unfortunately, some individuals find themselves involuntarily working in some form of non-standard employment for years.

The evidence suggests that once engaged in non-standard employment, the majority of workers remain in such jobs for an extended period of time. More than half (54%) of the 5.0 million people in non-standard jobs in 1999 maintained this form of employment throughout the following two years. An additional 9% were non-standard workers in 1999 and 2001, but not during the interim year (Table 3).

In contrast, only 17% of those in non-standard jobs in 1999 were engaged in standard employment the following year, while 12% were not working at all. However, by 2001, almost one in four non-standard workers two years earlier had obtained standard employment (23%), while 14% were not working. (An

alternative aspect of persistence is discussed later in the article in the context of the personal and job characteristics of non-standard workers.)

### A gateway to standard employment

Non-standard employment is often a method of entering the workforce. Some 60% of individuals who moved from no employment in 1999 into employment in either 2000 or in 2001 initially found non-standard jobs (Table 4). Specifically, of the 1.2 million Canadians with jobs in 2000 who had been jobless in 1999, some 57% found non-standard employment. Similarly, in 2001, 69% of the 391,000 workers who had been jobless during the preceding two years were employed in non-standard jobs.

In contrast, the overall incidence of non-standard employment at any given time (38%, on average, in 2001) tends to be much lower than that of people



## Data source and definitions

The longitudinal **Survey of Labour and Income Dynamics** (SLID), carried out since 1993, features questions on labour market participation patterns over time. SLID follows a panel of individuals over a six-year period, collecting detailed information for up to six jobs held during the course of each year. The survey also provides detailed information on family structure, personal and family income, educational attainment, disability, immigration status, and a wide range of other socio-economic characteristics. (Persistent non-standard employment cannot be measured using static snapshots such as those provided by the monthly Labour Force Survey.)

This study relies on SLID data from 1999 to 2001—for two reasons: First, prior to 1999, information was not collected on whether jobs were temporary or permanent.<sup>1</sup> Second, this time period doubles the sample size by using the overlapping years of two panels: 1996-2001 and 1999-2002.

SLID provides labour market information for all individuals aged 16 to 69. The 2001 sample used for the cross-sectional analysis portion of this article covers all individuals in this age range. The sample for the longitudinal analysis portion, however, is restricted to those aged 16 to 67 in 1999 (18 to 69 in 2001) who were survey respondents in all three years. Jobs were excluded from both samples if values were missing for any of the three key variables used to identify standard/non-standard employment: paid versus self-employment, permanent versus temporary work, and full- versus part-time job).

**Non-standard jobs** are all forms of self-employment (with or without paid help), part-time jobs (less than 30 hours weekly), and temporary jobs.

**Non-standard workers:** Workers whose main job during the year was non-standard. The main job corresponds to the one with the most annual hours of work.

In the literature, the self-employed with paid help are often excluded from the definition of non-standard workers. This study includes all the self-employed to provide a sharper contrast with the traditional notion of standard work—that is, full-time, permanent employees. Some researchers exclude voluntary part-time workers, self-employed professionals (for example, lawyers or doctors), or those working non-standard schedules (such as rotating or night shifts, or working 'on call'). One proposed broad definition of a standard worker is one who has one employer, works full year, full time on the employer's premises, enjoys extensive statutory benefits and entitlements, and expects to be employed indefinitely (Vosko et al. 2003). All other workers are non-standard. Other definitions have included other groups, such as multiple jobholders (Krahn 1995) and shift workers (Sunter 1993).

**Persistent non-standard workers:** Those whose main job was non-standard in all three years.<sup>2</sup> This article examines two persistence rates: the proportion of non-standard workers in 1999 who remained in non-standard jobs during the following two years, and those who were in these types of jobs throughout the 1999-2001 period as a proportion of non-standard workers at any time during the period.

**Own-account workers** are self-employed and have no paid help.

**Employers** are self-employed with paid help.

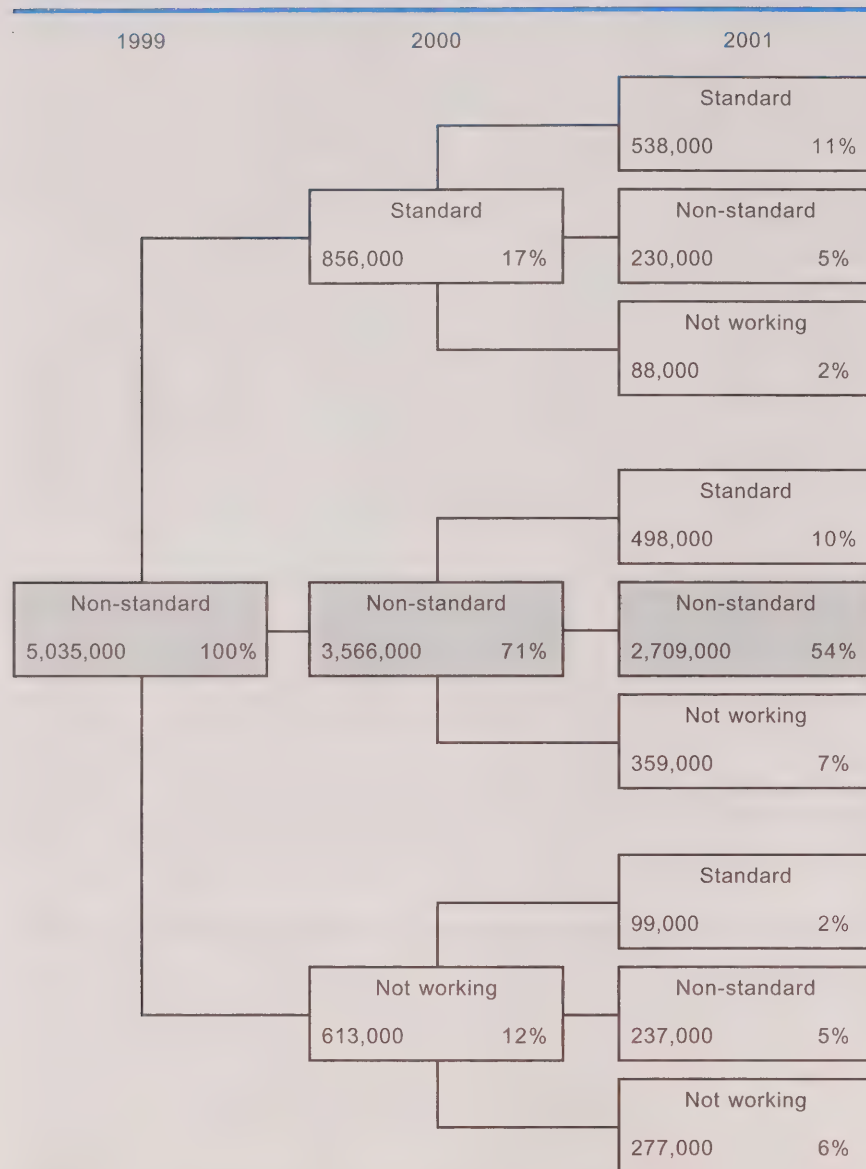
**Temporary employment** includes seasonal work; non-seasonal temporary, term or contract jobs; casual jobs; and work obtained through a temporary help agency.

**EI beneficiary-unemployed ratio:** The percentage of unemployed during the year who received Employment Insurance.

**Table 2: Economic aspects of non-standard work**

		Non-standard jobs					
		Total	Self-employed		Temporary		Permanent part-time
			Own account	Employer	Full-time	Part-time	
<b>Work and earnings</b>							
Average annual work hours	1,961	1,410	1,922	2,540	1,372	782	906
Average hourly earnings	18.89	13.17	16.99	19.26	13.65	11.58	13.20
Average annual earnings	40,900	22,100	24,400	55,600	19,100	10,900	15,100
<b>Unemployment</b>							
Unemployment rate	10	17	F	F	41	21	12
EI beneficiary–unemployed ratio (%)	41	34	F	F	49	16	14
<b>Family income</b>							
Average family income (\$)	64,000	60,100	52,500	76,800	56,600	63,800	60,600
Below the low-income cut-off (%)	3	11	15	8	9	10	9

Source: Survey of Labour and Income Dynamics, 2001

**Table 3: Labour market transitions of non-standard workers in 1999\***

Source: Survey of Labour and Income Dynamics, 1999-2001

\* Individuals aged 16 to 67 in 1999.

making a transition from no job into non-standard employment. This finding indicates that while most working Canadians are standard workers, the majority of new entrants to the labour market, or re-entrants following a period of joblessness, are initially non-standard workers.

Non-standard jobs are a common way of entering the labour market for several reasons. Among employers, a temporary or part-time job may be a way of recruiting and screening new employees, who may eventually be

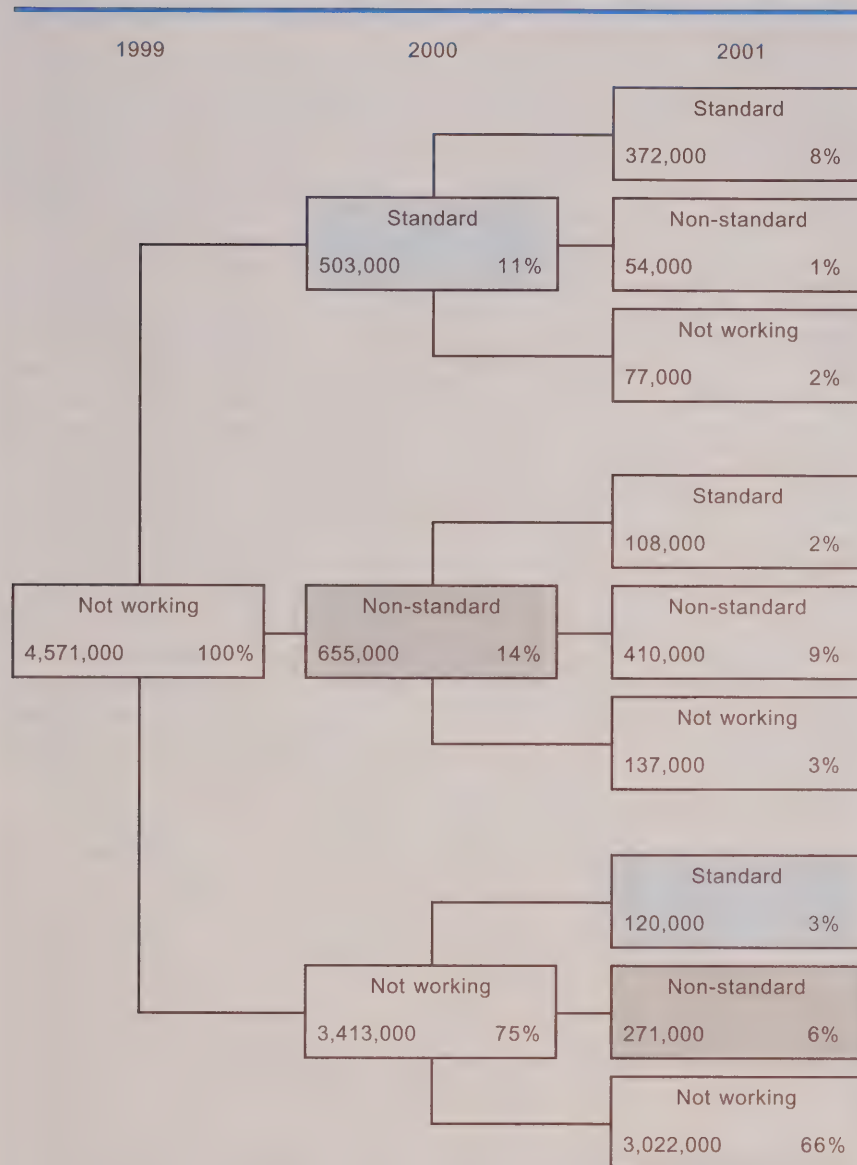
offered standard employment. From a young person's point of view, a temporary job may be the easiest kind of work to find, particularly a first job. Part-time jobs offer a compromise solution for many students seeking to balance school and work. They are also popular among women re-entering the labour force who may wish to earn some income but still have time to deal with family responsibilities.

### Non-standard workers

People in non-standard jobs were more likely to be younger or older than those in standard jobs. In 2001, 27% of non-standard workers were aged 16 to 24, and 15% were 55 to 69; the corresponding estimates for standard workers were 10% and 9%. Among younger workers, non-standard work may be preferred by those still in school, or seen as a temporary situation by those with little or no experience in the labour market. In contrast, some older workers may be opting for part-time, temporary or self-employed jobs as a stepping stone from a permanent full-time job to retirement.

Non-standard workers were somewhat more likely than standard workers to be women: 53% and 43% respectively (Table 5). In terms of life phase, 64% of standard workers versus 44% of non-standard workers were individuals aged 25 to 54 without preschool children. The most notable differences were found among full-time students, who made up 5% of standard and 24% of non-standard workers, and men 25 to 54 without preschool children (35% and 20%). In contrast, women without preschool children represented only



**Table 4: Labour market transitions of persons not employed in 1999\***

Source: Survey of Labour and Income Dynamics, 1999-2001

\* Individuals aged 16 to 67 in 1999.

Note: The grey boxes identify transitions from no work to non-standard work; the blue boxes identify transitions from no work to standard work.

a slightly higher proportion of the standard workforce than the non-standard (29% versus 24%).

In terms of educational attainment, non-standard workers were more likely to have less than a high school

diploma (20% compared with 13%) or some form of post-secondary schooling (20% versus 14%). This arises, in part, because many in these education categories are still attending school, and

employed students tend to work in part-time or temporary jobs. In contrast, well over half (56%) of standard workers had a college certificate or diploma or a university degree, compared with 45% of non-standard workers.

Region of residence had little effect on the distribution of standard and non-standard jobs. Some differences existed, however, according to the size of a worker's area of residence. Higher proportions of non-standard jobs were found in rural and smaller urban areas (population under 30,000); the opposite was noted in urban areas with a population of 100,000 or more.

A different perspective on the frequency of non-standard forms of employment is offered by incidence rates (Table 5). While 38% of all employed workers aged 16 to 69 held non-standard jobs in 2001, the rate for specific subgroups varied extensively—from a low of 28% among 25 to 34 year-olds to a high of 62% among those 16 to 24, many of whom would likely be students. Indeed, the incidence of non-standard work among employed full-time students was extremely high, at 76%. In contrast, the incidence of non-standard work among women aged 25 to 54 with pre-school children was only marginally higher than the national average (42% versus 38%).

Non-standard employment rates were relatively high among older workers, at 53% for working women aged 55 to 69 and 47% for their male counterparts—again suggesting that many older workers may be opting for non-standard work as a form of semi-retirement following a full-time permanent career.

**Table 5: Demographic profile of standard and non-standard workers**

	Standard	Non-standard	Incidence of non-standard work
		%	
<b>All individuals aged 16 to 69</b>	<b>100</b>	<b>100</b>	<b>38</b>
<b>Age</b>			
16 to 24	10	27	62
25 to 34	26	17	28
35 to 44	30	22	31
45 to 54	25	20	33
55 to 69	9	15	49
<b>Sex</b>			
Men	57	47	34
Women	43	53	43
<b>Life phase</b>			
Full-time students, all ages	5	24	76
Youth 16 to 24, excluding full-time students	7	6	35
Men 25 to 54 with preschool children	9	5	24
Men 25 to 54 without preschool children	35	20	26
Men 55 to 69	6	8	47
Women 25 to 54 with preschool children	5	6	42
Women 25 to 54 without preschool children	29	24	33
Women 55 to 69	4	6	53
<b>Education</b>			
Less than high school	13	20	50
High school diploma	18	14	33
Some postsecondary	14	20	47
College certificate or diploma	37	29	33
University degree	19	16	35
<b>Region of residence</b>			
Atlantic	7	8	43
Quebec	24	23	37
Ontario	40	37	36
Prairies	17	18	40
British Columbia	12	13	40
<b>Size of area of residence</b>			
Rural	9	14	49
Urban			
Under 30,000	11	14	44
30,000 to 99,999	11	11	38
100,000 to 499,999	17	15	36
500,000 and over	52	45	35

Source: Survey of Labour and Income Dynamics, 2001

## Non-standard jobs

The greatest disparity between the distributions of standard and non-standard workers by industry was found in manufacturing, which accounted for 20% of the former but only 6% of the latter in 2001 (Table 6). In contrast, people in non-standard jobs were somewhat more likely to be found in the primary industries, accommodation and food services, construction, or trade; 42% were employed in one of these industries, compared with 28% of standard workers. Many of these industries have a strong seasonal component, which entails hiring workers on a temporary basis (for example, farming and construction from spring to fall, and retail trade during the Christmas season). Others, such as food services, and again retail trade, are characterized by a fluctuating demand for employees throughout the day or week—a situation that is handily met by part-time staff.

Although firms with 100 or more employees accounted for the majority of standard (63%) as well as non-standard (52%) workers (excluding the self-employed), only one in five standard workers were found in companies with fewer than 20 employees, compared with one in three non-standard workers. Employees in non-standard jobs were also less likely to be unionized (26% compared with 35%).

Three-quarters of standard workers had a regular daytime schedule, compared with only half of non-standard workers. Almost 4 in 10 of the latter group were on rotating or split shifts, or had on-call or other irregularly scheduled work.

The incidence of non-standard employment varied widely across industries. At least half of all workers in the primary and utility

The incidence of part-time, temporary or self-employed jobs was highest in the Atlantic provinces (43%) and lowest in Ontario (36%). The incidence was also particularly high in rural areas—almost half, many of whom are likely self-employed in agriculture or some other primary industry.



**Table 6: Job profile of standard and non-standard workers**

	Standard	Non-standard	Incidence of non-standard work
		%	
<b>All individuals aged 16 to 69</b>	<b>100</b>	<b>100</b>	<b>38</b>
<b>Industry of main job</b>			
Primary* and utilities	4	8	57
Construction	5	8	50
Manufacturing	20	6	15
Wholesale and retail trade	14	17	42
Transportation and warehousing	5	4	32
Finance, insurance, real estate and leasing	6	4	31
Professional, scientific and technical	6	7	43
Business, building and other support	3	5	50
Educational services	7	7	37
Health care and social assistance	10	11	40
Information, culture, arts, entertainment and recreation	4	6	46
Accommodation and food	5	9	51
Other services	4	5	47
Public administration	7	4	25
<b>Firm size**</b>			
Under 20 employees	19	32	38
20 to 99	18	16	24
100 to 499	15	12	23
500 and over	48	40	23
<b>Union member**</b>			
Yes	35	26	22
No	65	74	31
<b>Work schedule**</b>			
Regular daytime	74	51	21
Regular evening or night	6	12	41
Rotating or split shift, on-call or irregular	20	38	43

Source: Survey of Labour and Income Dynamics, 2001

\* Includes agriculture, forestry, fishing and mining.

\*\* Employees only.

industries; accommodation and food services; construction; and business, building and other support services had non-standard jobs in 2001. In comparison, only 15% of jobs in manufacturing and 25% in public administration were non-standard.

Non-standard jobs were more common in small firms (under 20 employees) than in larger firms.

They were also more common among non-unionized workers and those not working a regular daytime schedule.

### Persistence depends on demographics...

Of individuals who experienced at least one year of non-standard work over the 1999-2001 period, 38% were non-standard workers in

all three years (Table 7).<sup>7</sup> However, persistence varied by age, sex and life phase. For example, among 45 to 69 year-olds, half reported having a non-standard job over the three years, compared with 25% of those 25 to 34. In contrast, the persistence of non-standard work was relatively low among youth not attending school full time (only 14%)—an indication that this type of work is typically a temporary phase preceding permanent, full-time employment.

Educational attainment was not a strong factor affecting persistence, although non-standard workers with a university degree were somewhat more likely to have held such jobs for the entire three-year period.

### ... and type of non-standard employment

Yet another facet of persistence is revealed by comparing a non-standard worker's employment status in 1999 with their status in 2001, regardless of any labour market activities during 2000 (Table 8).<sup>8</sup> Overall, almost half (47%) of non-standard workers in 1999 were in the same type of non-standard job two years later, but the percentage varied according to the type of non-standard work.

A high proportion of those self-employed in 1999 were in the same type of work two years later (68% of own-account workers and 76% of employers).<sup>9</sup> The remaining individuals were almost as likely to have found some other type of non-standard employment as they were to have standard jobs or no work at all.

Temporary part-time workers, on the other hand, were the least likely to continue in the same type of employment (only 18%). In most

**Table 7: Persistence of non-standard work by demographic characteristics**

	Non-standard work	
	One or two years out of three	All three years
	%	
<b>All individuals aged 16 to 69</b>	<b>62</b>	<b>38</b>
<b>Age</b>		
16 to 24	72	28
25 to 34	75	25
35 to 44	58	42
45 to 54	52	48
55 to 69	52	48
<b>Sex</b>		
Men	60	40
Women	64	36
<b>Life phase</b>		
Full-time students, all ages	66	34
Youth 16 to 24, excluding full-time students	86	14
Men 25 to 54 with preschool children	56	44
Men 25 to 54 without preschool children	55	45
Men 55 to 69	49	51
Women 25 to 54 with preschool children	66	34
Women 25 to 54 without preschool children	62	38
Women 55 to 69	56	44
<b>Education</b>		
Less than high school	63	37
High school diploma	60	40
Some postsecondary	64	36
College certificate or diploma	62	38
University degree	57	43

Source: Survey of Labour and Income Dynamics, 1999-2001

The relatively low persistence of both full- and part-time temporary work is not surprising. Since temporary work is of limited duration by definition, many incumbents migrate to a new job once their old one has ended. Often, that new job is full-time and permanent. Permanent part-time work may tend to be of longer duration, however, when it is voluntary and related to a particular phase in life—for example, while a person is attending school or taking care of young children. It can also be a transitional form of employment for an older worker approaching retirement. Finally, self-employment may last the longest, on average, because it is often a voluntary long-term career choice made at a relatively young age—although some older workers opt for this type of job in semi-retirement as well.

### Summary

Non-standard employment is fairly common in Canada, accounting for almost two in five workers aged 16 to 69. Concerns about non-standard work arise because workers in these jobs tend to have low

cases, these people moved into another form of non-standard employment (36%) or a standard job (26%). Nevertheless, temporary part-time jobholders in 1999 were the most likely to have no job at all in 2001 (19%).

Temporary full-time workers in 1999 were the most likely to have found standard work by 2001 (39%), followed by permanent part-timers (28%). Nevertheless, almost 4 in 10 such employees remained in the same kind of non-standard job.

**Table 8: Employment status of non-standard workers two years later\***

	Type of work in 2001			
	Non-standard		Standard	No work at all
	Same type	Other type		
Type of non-standard work in 1999	%			
All non-standard workers	47	16	23	14
Self-employed own account	68	10	10	12
Self-employed employers	76	8	7	9
Temporary full-time	31	13	39	17
Temporary part-time	18	36	26	19
Permanent part-time	38	20	28	14

Source: Survey of Labour and Income Dynamics, 1999-2001

\* Workers aged 18-69 in 2001.



earnings and are more likely to live in low-income families. They also face greater risk of unemployment and enjoy fewer employer- or government-sponsored benefits.

Adding fuel to these concerns is the persistence of non-standard employment among the people who hold these jobs. For example, of the five million Canadians in non-standard jobs in 1999; half remained in such jobs throughout the following two years. Older workers (45 to 69) were particularly susceptible.

The potentially negative aspects of non-standard work are mitigated by many individuals choosing self-employment, or temporary or part-time jobs. Moreover, non-standard work often serves as a gateway to standard employment. For example, some 60% of individuals without jobs in 1999 who were subsequently employed in 2000 or 2001 initially found non-standard work. And the temporary nature of non-standard work among youth indicates that for this group non-standard work is typically a stepping stone to permanent full-time employment.

### Perspectives

#### ■ Notes

1 Job permanency is determined by the following two SLID questions: (a) Is [the] job permanent, or is there some way that it is not permanent? If not permanent, the respondent is also asked: (b) In what way is [the] job not permanent? Response choices are seasonal job; temporary, term or contract job (non-seasonal); casual job; work done through a temporary help agency; other (specify).

2 Some excluded individuals who appear to have experienced less than three years of non-standard work would have been counted as non-standard workers if their employment data prior to 1999 or following 2001 had been available.

3 Virtually all non-standard workers had only non-standard jobs that year.

4 Differences in hourly wages and annual earnings among the various groups of non-standard workers, as well as between standard and non-standard workers generally, reflect the diverse job and worker characteristics associated with these groups (for example, varying distributions by age, education and occupation).

5 Low-income status is based on Statistics Canada's after-tax low-income cut-offs (LICOs): income thresholds at which a family would typically spend 20 percentage points more of its income than the average family on the necessities of food, shelter and clothing. LICOs vary according to family and community size.

6 The greater prevalence of low income among employers than among standard workers suggests greater income inequality in the former group.

7 This concept of persistence is different from the one discussed earlier. According to the previous concept, 54% of Canadians who were non-standard workers in 1999 (the denominator used in those calculations) remained non-standard workers throughout the remaining two years. In this section, the denominator used to determine the persistence of non-standard work is the number of workers with non-standard jobs at some time in the 1999-2001 period; for example, the overall rate of persistence using this method (38%) was calculated by dividing the number who were non-standard workers during all three years by the total number who were non-standard workers during one, two, or all three years.

8 The interim year (2000) is ignored because including it would complicate the display of results.

9 Self-employment was more common among male than among female non-standard workers (48% versus 26%) and virtually non-existent among youth.

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# Earnings of temporary versus permanent employees

Diane Galarneau

In the early 1990s, non-standard employment—temporary work, part-time work and self employment—seemed to be escalating at a worrisome rate. This led to fears that employment conditions were deteriorating for a substantial percentage of workers (OECD 2002; Krahn 1995; Schellenberg 1996). From 1997 to 2003, temporary work grew much more rapidly than permanent employment, despite a period of economic growth and favourable employment conditions. Indeed, GDP expanded during the entire period and the unemployment rate stayed below 8%.

Temporary jobs are generally less well paid than permanent ones, offer fewer employee benefits, are less likely to offer on-the-job training, and are precarious. Indeed, temporary work does not seem to be the first choice of many who do it. Recent data are sparse, but in 1994, two-thirds of temporary employees would have preferred permanent employment (Schellenberg 1996). Nonetheless, temporary employment has certain advantages for both employee and employer. Greater flexibility may allow employees to achieve a better balance between work and personal life, while employers can adjust operations to meet fluctuations in demand. Temporary work may also provide a gateway into the labour market or serve as a springboard to a permanent position (Kapsalis and Tourigny 2005).<sup>1</sup>

On the whole, temporary work can be viewed as an inexpensive buffer that reduces frictional unemployment and improves the overall functioning of the labour market. However, the workers involved pay part of the price for this adjustment mechanism. Using the Labour Force Survey, this study attempts to explain the earnings gap between temporary and permanent employees based on some of their characteristics. For the first time, this comparison is made by

type of temporary employment, since the characteristics of such employees vary greatly depending on whether their jobs are term or contract, seasonal, casual, or obtained through an employment agency (see *Data source and definitions*). Economic vulnerability is also addressed: How persistent is the earnings gap when hours worked, earnings of other members of the household, and number of dependants are taken into account?<sup>2</sup>

## A significant contribution

Temporary employment<sup>3</sup> accounted for almost one-fifth of overall growth in paid employment between 1997 and 2003.<sup>4</sup> This stood against the 12.5% of paid employment that temporary employment represented in 2003, up slightly from 11.4% six years earlier. Contract employment<sup>5</sup> accounted for the largest percentage of this growth (56.3%), the rest being taken up by seasonal and casual employment. On the other hand, jobs obtained through employment agencies and other temporary jobs decreased (Table 1).

In 2003, 40% of temporary employees were between the ages of 15 and 24. Flexibility and the short-term commitment associated with temporary positions were likely the major drawing cards for these young people, especially since 44% were students. For many, this type of work may have been a way to pay for their education (see *Young temporary workers*). Workers 55 and over made up 9% of the temporary labour force, comparable to their percentage among employees as a whole. The lower level of commitment and greater flexibility of temporary employment likely facilitates the transition from working life to retirement for some.

Persons aged 25 to 54 represented slightly more than half (809,200) of temporary workers. They have been focused on in this article in order to eliminate those making the transition from school to work or from work to retirement. Between 1997 and 2003, temporary workers represented 8% to 9% of employees in this age group. Slightly more than half (4.7% in 2003) were contract employees, while the other half consisted

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## Data source and definitions

This article is based on the Labour Force Survey (LFS), which surveys households on a monthly basis. The LFS provides information on general labour market trends by industry and occupation, hours worked, participation rate, and unemployment rate. And since January 1997, the LFS has classified paid jobs as either permanent or temporary, based on the intentions of the employer and the characteristics of the job. If a job officially considered permanent is ending in the near future because of downsizing or closure, it is still regarded as permanent.

A **temporary job** has a predetermined end date or will end as soon as a specific project is completed. Temporary jobs are sub-classified into four groups: seasonal; term or contract, including work done through a temporary help agency; casual; and other temporary work. In this article, full-time and part-time temporary employees are combined, the variable of full or part time being considered a characteristic and serving to explain the earnings gaps between permanent and temporary employees.

A **permanent job** is expected to last as long as the employee wants it, given that business conditions permit. That is, there is no predetermined end date. For this study, persons holding permanent employment were divided according to whether they worked full time (generally 30 hours or more per week at their main or only job) or part time (generally less than 30 hours per at their main or only job). Permanent full-time workers are often considered 'standard workers.'

**Self-employment** applies to working owners of incorporated or unincorporated businesses (with or without paid help). Except when overall employment is considered, this article deals only with employees.

**Non-standard jobs** encompass all forms of paid employment that is not permanent full-time. Temporary jobs, part-time jobs (permanent or temporary) and self employment therefore fall under the category of 'non-standard jobs'. However, in this article, the self-employed workers are excluded.

The **gap in hourly earnings** is the difference expressed as a percentage of the earnings of permanent employees.

of seasonal employees (1.9%) and casual employees (including those using employment agencies and other types of temporary employees) (1.6%).

## A varied profile

Temporary employees aged 25 to 54 vary greatly. For example, they are overrepresented among employees with low levels of education, but also among workers with university degrees. Temporary jobs are more

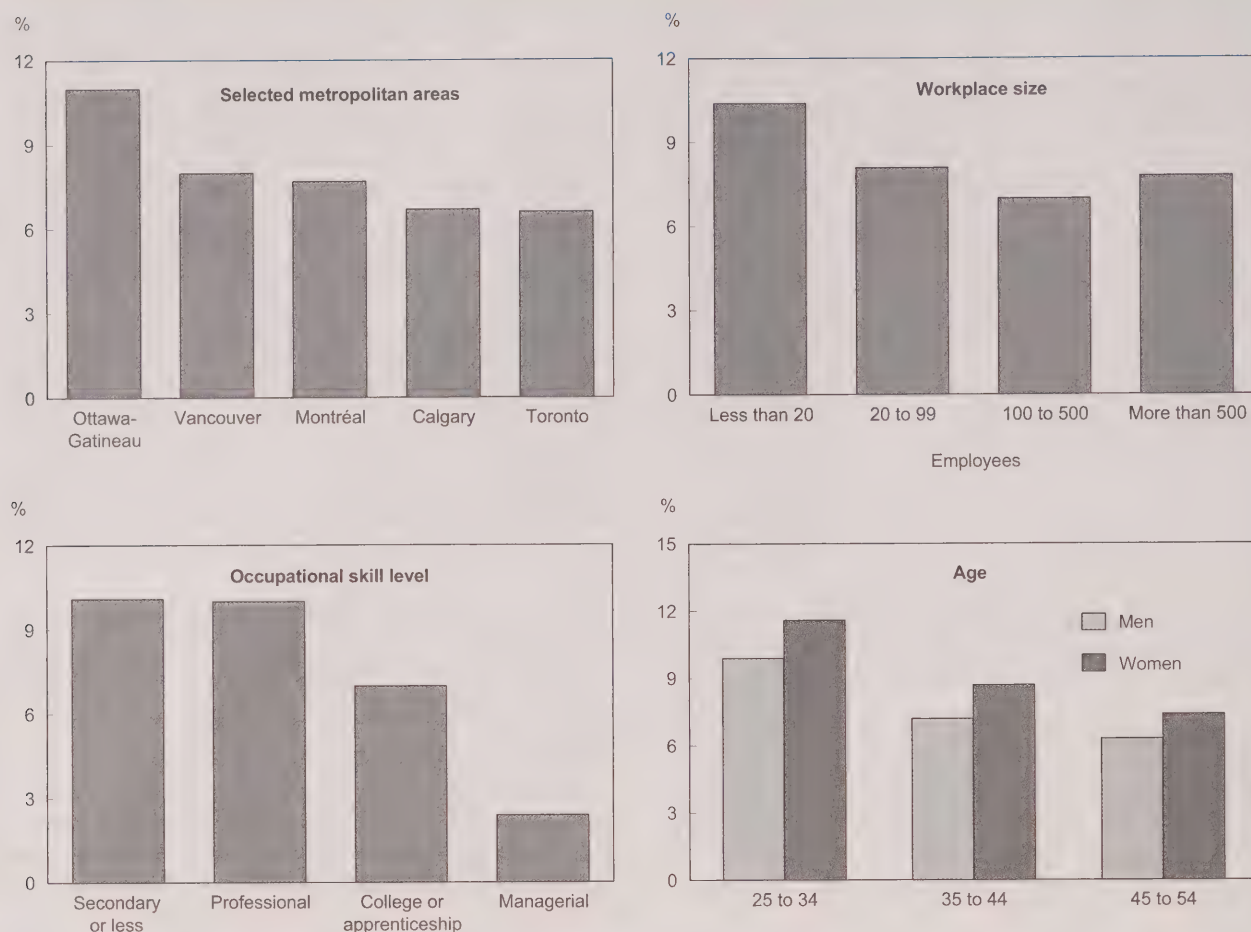
common in rural areas, but the Ottawa-Gatineau metropolitan area is also distinguished by a high proportion of temporary workers. They are overrepresented in small workplaces and in public administration (Charts A and B).

Temporary employees also work in a wide variety of industries and occupations. They are overrepresented both in occupations requiring few skills and in ones requiring the opposite. This diversity notwithstanding,

**Table 1: Temporary and permanent employees**

	1997		2003		Growth 1997-2003	Contri- bution to growth 1997-2003
	'000	%	'000	%		%
<b>Total employees</b>	<b>11,421</b>	<b>100.0</b>	<b>13,333</b>	<b>100.0</b>	<b>16.7</b>	<b>100.0</b>
Permanent	10,125	88.6	11,673	87.5	15.3	81.0
Temporary	1,296	11.4	1,660	12.5	28.1	19.0
Contract	592	5.2	797	6.0	34.6	10.7
Seasonal	328	2.9	392	2.9	19.4	3.3
Casual	339	3.0	437	3.3	29.1	5.1
Agency	28	0.2	27	0.2	-0.6	0.0
Others	11	0.1	8	0.1	-27.8	-0.2

Source: Labour Force Survey

**Chart A: Proportion of temporary workers I**

Source: Labour Force Survey, 2003

younger workers (25 to 34 year-olds), women, and part-time workers were overrepresented among temporary employees.

These varied characteristics can be explained by the type of temporary employment (seasonal, contract, through an agency, casual, or other). In fact, substantial differences exist in the characteristics of employees (sex, level of education, seniority, rate of part-time employment, occupation, industry) according to type of temporary employment, and this is reflected in the earnings gap with permanent employees.

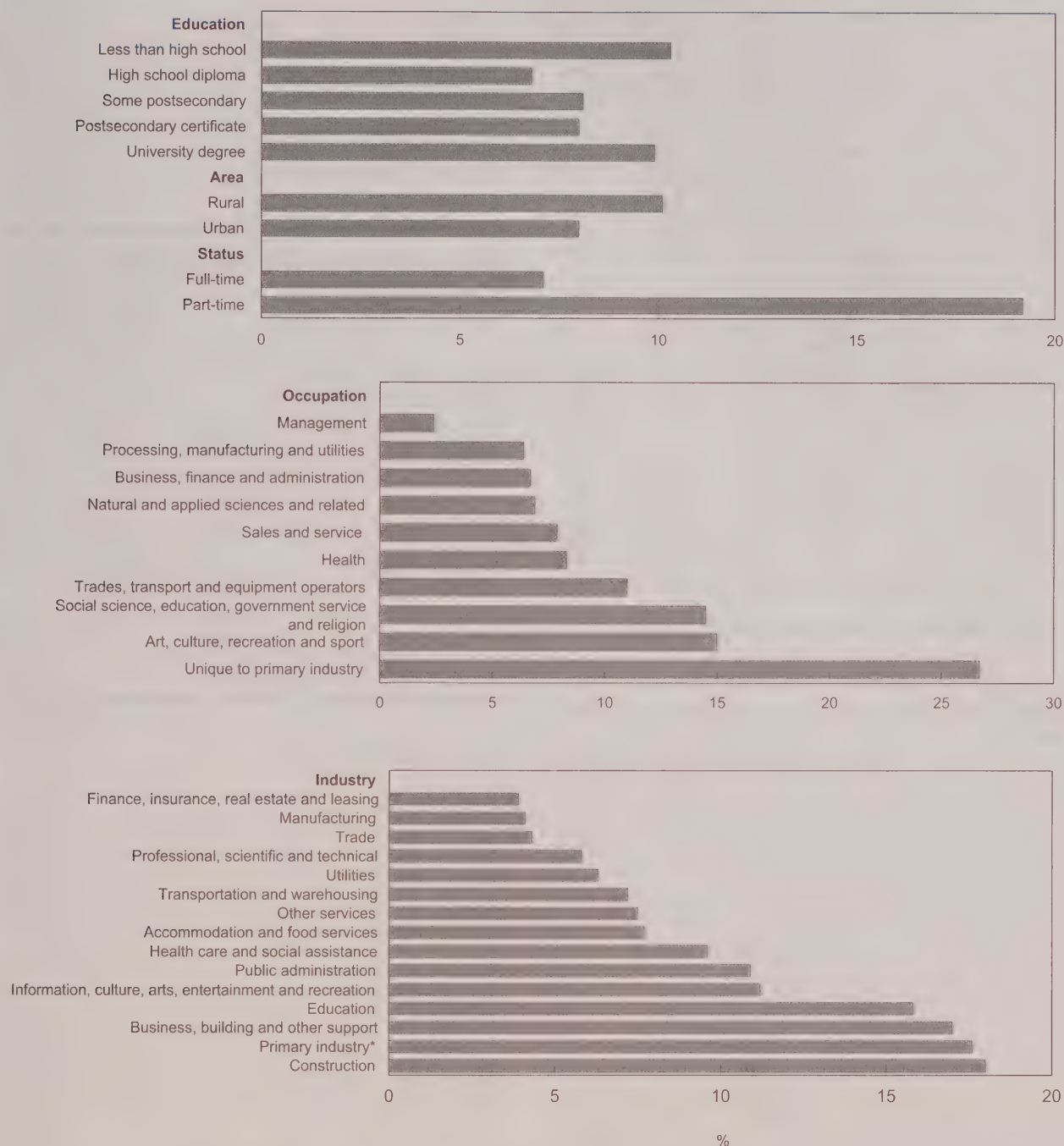
### The earnings gap

In 2003, temporary workers earned 16% less per hour than their permanent counterparts, or \$16.69 versus \$19.98. From 1997 to 2003, the gap varied between -16% and -19% (reached in 2000).<sup>7</sup>

Of the four types of temporary employees, contract employees showed the smallest gap, earning an average of 8% less than their permanent counterparts in 2003. Seasonal, casual and others, and those using employment agencies earned 28%, 24% and 40% less respectively (Table 2).



Chart B: Proportion of temporary workers II



Source: Labour Force Survey, 2003

\* Agriculture, forestry, fishing and hunting, mining, and oil and gas

**Table 2: Hourly earnings gap, by type of employment and sex**

	1997		2003	
	Hourly earnings	Gap	Hourly earnings	Gap
	\$	%	\$	%
<b>Both sexes</b>				
Permanent	17.14	...	19.98	...
Temporary	14.29	-17	16.69	-16
Contract	15.82	-8	18.32	-8
Seasonal	12.27	-28	14.41	-28
Casual and others	13.31	-22	15.24	-24
Agency	11.02	-36	12.06	-40
<b>Men</b>				
Permanent	18.88	...	21.87	...
Temporary	15.09	-20	17.75	-19
Contract	16.86	-11	19.83	-9
Seasonal	13.49	-29	15.88	-27
Casual and others	13.81	-27	15.63	-29
Agency	11.82	-37	12.30	-44
<b>Women</b>				
Permanent	15.23	...	17.97	...
Temporary	13.56	-11	15.75	-12
Contract	15.00	-2	17.20	-4
Seasonal	9.42	-38	11.14	-38
Casual and others	13.06	-14	15.06	-16
Agency	10.30	-32	11.79	-34

Source: Labour Force Survey

The gap also varied by sex. In 2003, women temporary employees earned 12% less per hour than their permanent counterparts, compared with a difference of -19% for men. Women posted a smaller earnings gap than men throughout the entire period. This could be attributed partly to their higher concentration in contract employment. Furthermore, the earnings gap for women holding contract or casual positions or positions obtained through employment agencies was lower (-4%, -16% and -34% respectively) than for men (-9%, -29% and -44%). Seasonal employment was the only category in which men showed a smaller gap (27% versus 38%).

Is the earnings gap between temporary and permanent employees greater in the private sector than in the public sector because of generally more uniform employment conditions in the public sector? Average hourly earnings are higher for public-sector employees; however, the gap between temporary and permanent employees in each sector is not always consistent with this finding. For example, contract employees in the public sector had higher hourly earn-

ings (\$20.65 versus \$16.56). However, they earned 14% less than permanent employees in the public sector (\$24.02), compared with the -11% gap in the private sector (Table 3). Furthermore, in the private sector, casual and other employees as well as those hired through employment agencies showed larger gaps compared with permanent employees.<sup>8</sup> Irrespective of the type of temporary employment, earnings gaps in comparison with permanent employees can be explained largely by the characteristics of each type of temporary employment.

**Table 3: Hourly earnings gap, by sector**

	Sector	Average hourly earnings	Earnings gap
		\$	%
<b>Employees</b>			
Permanent	Public	24.02	...
	Private	18.70	...
Contract	Public	20.65	-14
	Private	16.56	-11
Seasonal	Public	15.32	-36
	Private	14.29	-24
Casual and others	Public	18.73	-22
	Private	12.87	-31
Agency	Public	18.48	-23
	Private	11.79	-37

Source: Labour Force Survey, 2003

### Contract workers

In 2003, 57% of contract workers were women. Holding contract employment appears to have less effect on the earnings gap, given the high levels of education among contract workers (38% had a university degree compared with 23% of permanent employees) and unionization (41% versus 36%) (Table 4).

Moreover, their young age (44% are aged 25 to 34), their greater tendency to work part time (21% versus 10% for permanent employees), and their low levels of seniority (only 34% had worked for the same employer for more than two years, compared with 77% of their permanent counterparts) likely had the opposite effect.

Another factor that may tend to reduce the earnings gap is the strong concentration of contract employees in the professional group (Table 5).<sup>9</sup> More than a third of women working on contract held professional



**Table 4: Profile of temporary workers by type of employment**

	Permanent	Contract	Seasonal	Casual and others	Agency
<b>Total employees</b>	<b>8,737.6</b>	<b>449.0</b>	<b>185.6</b>	<b>156.0</b>	<b>18.6</b>
			'000		
Men	51.4	42.8	69.0	31.9	52.2
Women	48.6	57.2	31.0	68.1	47.3
<b>Age</b>			%		
25 to 34	30.9	44.0	33.8	35.9	43.5
35 to 44	37.0	33.3	36.3	35.7	34.4
45 to 54	32.1	22.8	29.8	28.3	21.5
<b>Province</b>					
Newfoundland and Labrador	1.3	2.8	7.1	3.1	F
Prince Edward Island	0.4	0.7	1.9	0.6	F
Nova Scotia	2.7	3.4	7.3	4.7	F
New Brunswick	2.2	2.6	6.9	3.9	F
Quebec	23.7	27.8	25.8	26.8	F
Ontario	41.0	36.7	22.7	25.9	75.8
Manitoba	3.5	2.9	2.9	3.5	F
Saskatchewan	2.8	2.2	3.2	3.6	F
Alberta	10.4	9.4	9.0	8.9	F
British Columbia	12.1	11.6	13.2	19.0	F
<b>Education</b>					
Less than high school	10.4	7.4	29.3	9.8	9.1
High school diploma	20.6	12.7	22.1	19.2	18.8
Postsecondary, partial or complete	45.6	41.7	40.4	49.6	42.5
University degree	23.4	38.2	8.2	21.3	29.6
Full-time	90.2	78.8	86.7	48.3	83.9
Part-time	9.8	21.2	13.4	51.7	16.1
Unionized	35.5	41.3	26.4	44.6	F
Not unionized	64.5	58.7	73.6	55.4	95.7
<b>Seniority (months)</b>					
1 to 3	3.3	19.6	22.2	16.9	30.6
4 to 6	3.9	14.9	15.0	12.4	22.6
7 to 9	3.5	9.7	5.5	8.1	14.0
10 to 12	3.0	6.8	3.3	5.0	F
13 to 24	9.8	15.3	12.8	14.9	15.1
More than 24	76.5	33.6	41.1	42.8	9.7
<b>Workplace size</b>					
Less than 20 employees	30.0	31.9	53.9	35.2	26.3
20 to 99	32.1	30.9	28.4	30.8	32.8
100 to 500	23.6	21.2	13.0	19.7	26.9
More than 500	14.4	16.1	4.7	14.3	14.0
Rural	21.4	20.0	43.4	24.2	12.9
Urban	78.6	80.0	56.7	75.7	87.1
<b>Metropolitan area</b>					
Montréal	11.8	12.6	7.1	9.9	F
Ottawa-Gatineau	3.0	5.8	0.9	2.3	F
Toronto	17.5	16.4	5.5	9.4	53.8
Calgary	3.8	3.2	2.5	2.7	F
Vancouver	7.0	6.8	4.3	9.1	F
Other	25.2	23.6	18.3	22.4	16.1
Non-metropolitan area	24.4	24.3	53.4	33.5	11.8
Urban centres	7.4	7.4	8.1	10.6	F

Source: Labour Force Survey, 2003

positions, the vast majority as teachers (21%), in contrast with only one-fifth of women in permanent employment.<sup>10</sup> Almost twice as many men working on contract were employed as professionals (28%) compared with their permanent colleagues (15%). Almost half were teachers, while another large group worked in natural and applied sciences, mainly as computer analysts or programmers. On the other hand, fewer men and women worked on contract in management and in less-skilled occupations.

Education, health care and social assistance, and public administration employed close to 6 in 10 women contract workers; construction, education, public administration and manufacturing accounted for the majority of men (55%).

### Seasonal workers

More than two-thirds of seasonal workers were men. Seasonal workers were slightly younger than permanent employees, although they were on average the oldest among temporary employees. They tended to work full time (87%) and more hours per week than permanent employees (42.7 hours versus 40.3).

Their low levels of education, their concentration in small workplaces, their low levels of seniority, as well as their low unionization rate compared with permanent workers could serve to widen their earnings gap (Table 4).

Virtually no professionals worked as seasonal employees. However, 1 in 5 men in seasonal employment were specialized workers, mostly in construction. Close to 1 in 4 were in primary-sector occupations,

## Young temporary workers

Persons aged 15 to 24 were greatly overrepresented among temporary workers: 29% compared with approximately 9% aged 25 to 54. Their characteristics were nonetheless very similar to those of their permanent counterparts. Many had taken or completed postsecondary studies, attended an educational institution, worked part time or in a small workplace, and were not unionized. Some 50% were employed in trade, accommodation and food services as permanent or temporary employees. Close to two-thirds of these young employees, whether permanent or temporary, held positions requiring little education (high school or less).

Temporary workers nonetheless tend to be younger than their permanent counterparts: 25% compared with 15% were aged 15 to 17. Moreover, 29% were aged 22 to 24 versus 41% of young permanent workers. Perhaps because of this different breakdown by age group, young temporary employees were more likely to attend an educational institution (44% versus 32%). In many cases, the temporary work could have been a summer job or employment through a co-op program, since 35% of young temporary employees had worked at their jobs for less than three months.

Major differences are apparent between age groups (15 to 17, 18 to 21, and 22 to 24) for both temporary and permanent employees. For example, school attendance

(full-time or part-time) decreased with age, while the percentage of women tended to increase, as did full-time work and unionization.

Some 70% of temporary workers aged 15 to 17 worked in trade, accommodation and food services or in information, culture and recreation. By age 22 to 24, this percentage was still high but less so (31%). Many young permanent workers also worked in these industries (82% of those aged 15 to 17 and 41% of those aged 22 to 24), but the percentage decreased with age. The occupations of young temporary workers, like those of their permanent counterparts, were largely unskilled—and much more often for those 15 to 17 (83%) than for those 22 to 24 (57%). The comparable percentages for young permanent employees were 84% and 58% respectively.

Given that young temporary and permanent employees have very similar characteristics, the small earnings gap between them is not very surprising. However, the gap tended to increase with age. Among those aged 15 to 17, hourly earnings were very similar; in fact, temporary workers earned slightly more (1.7%) than permanent workers. Temporary workers between 18 and 21 earned 1.9% less per hour,<sup>6</sup> and those between 22 and 24 earned 4% less.

## Characteristics of employed 15 to 24 year-olds

	Permanent employees			Temporary employees		
	15 to 17	18 to 21	22 to 24	15 to 17	18 to 21	22 to 24
<b>Number ('000)</b>	<b>238.8</b>	<b>718.5</b>	<b>677.7</b>	<b>164.0</b>	<b>309.0</b>	<b>190.3</b>
<b>Proportion (%)</b>	<b>15</b>	<b>44</b>	<b>41</b>	<b>25</b>	<b>47</b>	<b>29</b>
	%					
Students	76	33	15	67	40	31
Non-students	24	67	85	33	60	69
Men	48	51	51	52	52	49
Women	52	49	49	48	48	51
<b>Education</b>						
Less than high school	85	20	10	85	17	6
High school diploma	7	34	23	5	26	15
Postsecondary, partial or complete	8	45	55	10	56	58
University degree	F	1	12	F	1	22
Full-time	11	56	79	17	48	61
Part-time	89	44	21	83	52	39
Unionized	10	15	19	6	14	20
Not unionized	90	85	81	94	86	80
<b>Seniority (months)</b>						
1 to 3	19	15	10	37	38	29
4 to 6	18	14	11	20	19	18
7 to 9	13	11	9	10	8	10
10 to 12	10	8	7	7	6	7
13 to 24	26	22	22	17	15	17
More than 24	14	29	40	8	14	20



## Characteristics of employed 15 to 24 year-olds (concluded)

	Permanent employees			Temporary employees		
	15 to 17	18 to 21	22 to 24	15 to 17	18 to 21	22 to 24
	%					
<b>Workplace size</b>						
Less than 20 employees	49	45	40	56	46	39
20 to 99	43	38	34	35	33	32
100 to 500	8	13	19	8	15	17
More than 500	1	3	7	1	6	13
<b>Industry</b>						
Agriculture, forestry, fishing and hunting, mining, and oil and gas	3	2	2	5	4	4
Utilities	F	F	0	F	1	1
Construction	2	5	6	3	5	5
Manufacturing	3	11	14	4	8	7
Trade	37	35	23	30	25	13
Transportation and warehousing	1	2	4	F	2	2
Information, culture, arts, entertainment and recreation	9	5	5	15	10	9
Finance, insurance, real estate, rental and leasing	2	3	5	2	3	5
Professional, scientific and technical	1	2	5	2	3	5
Business, building and other support	2	4	5	3	6	6
Education	1	1	2	2	5	14
Health care and social assistance	2	4	8	3	6	10
Accommodation and food services	36	20	13	25	15	9
Other services	2	4	4	4	3	2
Public administration	1	1	2	2	5	7
<b>Occupational skill level</b>						
Managerial	F	1	3	F	1	1
Professional	1	2	8	2	5	16
College or apprenticeship	15	22	31	16	20	26
Secondary or less	84	75	58	83	74	57
Hourly earnings (\$)	7.47	9.64	12.56	7.60	9.46	12.06
Earnings gap	...	...	...	1.7	-1.9	-4.0

Source: Labour Force Survey, 2003

most often related to fishing, agriculture (and nurseries) and forestry. One in 10 seasonal workers drove trucks or buses. In summary, nearly two-thirds of these men were employed in construction, primary industries, or manufacturing.

The positions held by women were largely unskilled. Women were highly concentrated in sales and services (43%), where they worked as sales clerks, cashiers and cooks, for example. A high percentage also worked in processing, manufacturing and utilities occupations (14%) or those related to the primary sector (13%). Manufacturing (16%), accommodation and food services (16%), the primary industries (13%) and trade (11%) employed a substantial percentage of these women. This concentration by occupation and industry should tend to expand the earnings gap, more so for women than for men.

Given that primary industries tend to dominate seasonal employment to some extent, a higher percentage of workers holding this type of employment lived in rural areas compared with permanent workers (43% versus 21%) and in the Atlantic provinces (23% compared with 7%).

### Casual employees

Casual workers represented less than 20% of temporary employees. Women accounted for 68%, perhaps explaining the high part-time rate among casual employees (over half) compared with only 10% of permanent employees. Casual employees tend to be younger than their permanent counterparts and generally have fewer years of seniority with the same employer (only 43% had more than two years compared with 76%).

Table 5: Permanent and temporary employees by industry and occupation

	Men					Women				
	Perma- nent	Con- tract	Sea- sonal	Casual and others	Agency	Perma- nent	Con- tract	Sea- sonal	Casual and others	Agency
<b>Total</b>	<b>4,489.2</b>	<b>192.0</b>	<b>128.1</b>	<b>49.7</b>	<b>9.7</b>	<b>4,248.4</b>	<b>257.0</b>	<b>57.6</b>	<b>106.3</b>	<b>8.8</b>
<b>Occupational skill level</b>					%					
Managerial	10.1	3.9	1.3	1.2	0.8	6.8	2.4	1.9	1.2	0.0
Professional	15.2	28.3	1.4	9.5	2.6	21.1	35.1	3.4	19.9	10.5
College or apprenticeship	37.7	34.3	34.1	25.1	11.0	27.9	22.4	24.1	19.5	15.7
Secondary or less	37.0	33.5	63.2	64.1	85.6	44.2	40.1	70.6	59.4	73.8
<b>Occupation</b>										
Managerial	10.0	3.8	1.2	F	F	6.8	2.4	F	F	F
Business, finance and administration	11.0	10.6	1.9	9.7	19.6	31.7	27.3	11.8	20.9	45.5
Natural and applied sciences and related	11.8	14.2	4.8	5.0	F	3.9	4.8	3.1	F	F
Health	1.6	1.9	F	4.6	F	11.3	7.6	F	22.4	F
Social science, education, government service and religion	5.1	15.7	F	5.4	F	10.8	26.8	F	11.2	F
Art, culture, recreation and sport	1.5	4.5	2.0	F	F	2.0	4.6	F	1.5	F
Sales and service	17.3	10.7	8.8	26.0	F	25.4	19.8	42.7	35.7	F
Trades, transport and equipment operators	25.5	28.5	48.9	33.8	33.0	1.7	2.0	8.9	1.6	F
Unique to primary industry	2.3	2.3	23.7	F	F	0.4	F	12.7	F	F
Processing, manufacturing and utilities	13.8	8.0	8.0	9.1	36.1	6.0	4.4	13.5	4.2	30.7
<b>Industry</b>										
Agriculture, forestry, fishing and hunting, mining, and oil and gas	3.7	4.0	20.2	F	F	1.1	0.9	13.4	F	F
Utilities	1.8	2.1	F	F	F	0.5	F	F	F	F
Construction	7.4	16.9	31.7	11.5	F	1.2	0.6	3.3	F	F
Manufacturing	26.4	9.6	10.7	12.3	19.6	11.4	6.3	15.6	4.1	F
Trade	14.3	5.3	4.4	11.1	F	14.2	6.2	10.6	10.3	F
Transportation and warehousing	7.4	4.6	7.4	12.7	F	3.0	1.9	5.9	2.0	F
Information, culture, arts, entertainment and recreation	3.9	4.8	7.5	6.2	F	4.0	5.4	9.5	2.2	F
Finance, insurance, real estate, rental and leasing	4.6	3.1	F	F	F	9.1	4.0	F	4.4	F
Professional, scientific and technical	5.5	6.1	1.5	F	F	5.7	4.3	F	2.3	F
Business, building and other support	2.8	5.8	5.6	6.4	56.7	3.1	6.0	3.6	3.2	59.1
Education	4.9	15.7	1.2	7.0	F	10.0	25.4	7.8	14.4	F
Health care and social assistance	3.6	4.2	F	11.3	F	20.6	19.3	4.3	39.8	F
Accommodation and food services	3.4	2.0	3.3	5.4	F	5.9	2.3	15.8	7.6	F
Other services	3.3	2.9	1.2	4.2	F	3.5	4.0	F	2.9	F
Public administration	6.9	12.6	3.4	3.8	F	6.6	13.0	4.5	4.9	F

Source: Labour Force Survey, 2003

\* Through a long evaluation process, Human Resources and Skills Development Canada assigned required skill levels to more than 500 occupations in the National Occupational Classification. For more details, see [www15.hrdc-drhc.gc.ca/english/general.asp](http://www15.hrdc-drhc.gc.ca/english/general.asp).



Despite fairly comparable levels of education, close to two-thirds of male casual employees held occupations requiring no more than a high school education, in contrast with slightly over one-third of permanent employees. The gap for women was smaller but nonetheless substantial (59% compared with 44%).

A mere one-tenth of men employed on a casual basis held professional positions, compared with 15% of permanent employees. As for women, one-fifth worked as professionals (mainly registered nurses or teachers), a proportion comparable to that of permanent employees.

The strong concentration of casual workers in occupations requiring few skills should tend to increase the earnings gap between them and permanent workers, particularly for men. On the other hand, the relatively high unionization rate of casual employees (45% compared with 36%) should tend to close it.

### Agency placements

Some 19,000 workers were hired through employment agencies in 2003—an estimate comparable to previous years. Men were somewhat more likely to belong to this group. These workers displayed some surprising characteristics that set them apart. For example, 40% of the men held a university degree, a percentage similar to that of male contract employees. For women, the percentage holding a university degree was the same as for permanent workers (24%).

More than half of workers using employment agencies lived in Toronto, and close to 6 in 10 worked in business, building and other support services. Most were full time. In general, these employees had very low levels of seniority, less than 10% having worked for the same employer for more than two years. They were relatively young—close to 44% between the ages of 25 and 34—and almost all (96%) were not unionized.

Despite sometimes high levels of education, 86% of the men were in unskilled occupations, mainly in the large group related to processing, manufacturing and utilities (36%) and trades, transport and equipment operating (33%), often as equipment operators and construction trades helpers. Close to three-quarters of the women were in occupations requiring a high school education or less, often as office clerks (34%), or in processing and manufacturing (31%). This concentra-

tion within occupations requiring few skills should once again tend to widen the earnings gap with permanent employees.

### Explaining the earnings gap

A multi-factor analysis revealed that a combination of variables (age, education, province of residence, size of workplace, part-time employment, being non-unionized and living in a rural community) accounted for between one-quarter and one-half of the earnings gap between temporary and permanent employees (Table 6, adjustment 1).<sup>11</sup>

**Table 6: Adjusted earnings gap between temporary and permanent employees**

	Men	Women
		%
<b>Contract versus permanent</b>		
Gap without adjustments	-9	-4
After adjustments no. 1	-10	-7
After adjustments no. 2	-11	-9
<b>Seasonal versus permanent</b>		
Gap without adjustments	-27	-38
After adjustments no. 1	-12	-21
After adjustments no. 2	-12	-12
<b>Casual and others versus permanent</b>		
Gap without adjustments	-31	-17
After adjustments no. 1	-23	-13
After adjustments no. 2	-15	-11
<b>Agency versus permanent</b>		
Gap without adjustments	-44	-34
After adjustments no. 1	-58	-26
After adjustments no. 2	-38	-16

Source: Labour Force Survey, 2003

Contract employees were the exception. The relatively small earnings gap between them and permanent employees made the exercise less revealing. Nor did these variables seem to explain the gap in the case of men hired through employment agencies.<sup>12</sup>

Depending on the type of temporary employment, some of the variables had more or less influence on the gap. For example, the lower education level of seasonal workers, the small size of the workplaces they worked in, and their concentration in the Atlantic provinces played a determining role in explaining their earnings gap.<sup>13</sup>

For casual workers, the predominance of part-time work appeared quite crucial in explaining the gap.<sup>14</sup> Their concentration in certain provinces also played a role, but to a lesser extent. Being young and being employed in a small workplace were especially significant for men, who constituted less than one-third of casual employees. The gap for women who obtained their jobs through an employment agency was particularly sensitive to their young age and tendency not to be unionized.

Including industry and occupation for female seasonal workers, male casual workers, and those who obtained their jobs through an employment agency (both sexes) went a long way toward explaining the gap (adjustment 2). Doing so indicated that a substantial portion of the wage gap could be attributed to the heavy concentration of certain temporary workers in unskilled occupations and in industries with lower-paid jobs. For example, adding industry and occupation to the list of variables narrowed the gap for female seasonal employees from -21% to -12%. A similar effect was noted for male casual employees (from -23% to -15%) and for those using employment agencies (men from -58% to -38%; women from -26% to -16%).

The influence of industry and occupation tended to be minimal for contract employees, for men holding seasonal employment, and for women casual employees. The gap for these groups decreased little if at all after the variables were added.

## Overall situation

The finding that temporary employees earned less per hour than their permanent counterparts looks at only part of their financial situation. To reflect their overall situation, it is important to also consider hours of work, earnings of other household members, and number of dependants.<sup>15</sup>

Only couples were used for this exercise, making it possible to consider elements such as spouse's earnings and number of dependants. Couples represent the majority of employees: Close to three-quarters of women temporary employees were in a spousal relationship as were two-thirds of their male counterparts. For permanent employees as a whole, the proportion was three-quarters.

Temporary employees tend to work fewer hours per week than permanent employees. If weekly earnings are compared, the gap widens for men (from -19% to -22%) and women (from -12% to -26%). The more pronounced change for women is due to the much larger difference between permanent and temporary employees in the number of hours worked (-15%) than is the case for their male counterparts (-3%) (Table 7).

Most temporary workers in a couple relationship had a working spouse (72% of men and 86% of women). The percentages for permanent employees were also higher: 77% and 89% respectively. Spouses made a significant contribution to family earnings, especially for temporary workers. For example, for men, the

**Table 7: Earnings gap by various indicators, couples only**

	Hourly earnings	Weekly earnings	Weekly family earnings	Weekly family earnings adjusted for family size	Usual weekly hours	Spouse's weekly earnings	Spouse's usual weekly hours
	\$	\$	\$	\$	Average	\$	Average
<b>Men</b>							
Permanent	22.59	910	1,468	890	40.5	616	34.5
Temporary	18.29	714	1,243	768	39.1	577	35.3
Gap (%)	-19	-22	-15	-14	-3	-6	2
<b>Women</b>							
Permanent	18.08	631	1,416	870	34.5	913	41.8
Temporary	15.87	465	1,213	740	29.3	879	41.8
Gap (%)	-12	-26	-14	-15	-15	-4	0

Source: Labour Force Survey, 2003



spouse's contribution was 42% in the case of temporary employees, compared with 38% for permanent employees. For women, the proportions were 63% and 56%.

With respect to weekly family earnings, which include those of all members, the gap is lower for both men and women. However, the effect is much more significant for women: Their gap decreases by 12 percentage points, compared with 7 points for men. This reflects women's smaller role in family earnings, but also shows that spouses partly compensate for temporary workers' lower earnings since they contribute substantially to family earnings. Furthermore, the gap in weekly earnings of spouses of temporary and permanent workers is fairly small (between -6 and -4%), as is the gap in number of hours (between 0% and 2%).

Adjusting weekly family earnings according to family size has little effect for either men or women. For men, the smaller percentage of temporary employees with children under 18 (53% compared with 60% for permanent employees) narrows the gap marginally (from -15% to -14%); for women, the slightly higher percentage of temporary employees with children under 18 (58% compared with 55%) has the opposite effect—the gap widening from -14% to -15%.

When hours of work, earnings of other household members, and number of dependants are taken into account, significant gaps persist between permanent

and temporary workers. These factors affect all types of temporary employees fairly similarly. In other words, with a few exceptions, taking the number of hours into account widens the gap as a whole, taking the contribution of spousal earnings into account narrows it, while adjusting for the number of dependants has little effect.

After these factors were taken into account, contract workers still posted the smallest gaps in relation to permanent workers (-8% for men and -6% for women) (Table 8).

Male seasonal workers showed smaller gaps than initially (from -28% to -18%), primarily because of more hours worked (6% more than permanent employees) and, to a lesser extent, the contribution of spousal earnings. The negative effect of their low education level and their concentration in small workplaces and in the Atlantic provinces is therefore partially offset by their long hours of work and their family situation. A substantial average gap of -18% nonetheless persists for the 85,000 male seasonal workers (in couples).

For the 30% of temporary employees in spousal relationships (164,000 workers), an average earnings gap of -24% to -28% persists even when family situation is taken into account.<sup>16</sup> This group consists of female seasonal employees, casual workers, and workers using agencies.

**Table 8: Earnings gap by various indicators and type of temporary employment, couples only**

	Hourly earnings	Weekly earnings	Weekly family earnings	Weekly family earnings adjusted for family size	Usual weekly hours	Spouse's weekly earnings	Spouse's usual weekly hours
	\$	\$	\$	\$	Average	\$	Average
<b>Men</b>							
Contract	-9	-14	-10	-8	-6	1	3
Seasonal	-28	-24	-20	-18	6	-18	2
Casual and others	-30	-41	-24	-24	-19	-2	0
Agency	-46	-49	-16	-24	-7	-11	5
<b>Women</b>							
Contract	-4	-14	-7	-6	-10	-1	-2
Seasonal	-39	-42	-26	-26	-4	-14	6
Casual and others	-16	-44	-24	-28	-33	-4	2
Agency	-33	-36	-20	-26	-4	-26	-6

Source: Labour Force Survey, 2003

To the extent that temporary jobs provide a gateway into the labour market or a springboard to a permanent position, the earnings gap has fewer consequences. Kapsalis and Tourigny (2005) have shown that certain non-standard jobs, particularly temporary full-time jobs, can sometimes lead to permanent employment.

However, these more economically vulnerable employees earn a substantial portion of the family income (between one-half and two-thirds) and are mainly women (78%). They are only slightly younger (39.5 years) than permanent workers (40.0) and most have some postsecondary education (64%), but they hold largely unskilled jobs (two-thirds held a position requiring a high school education or less). They tend to have few years of seniority with the same employer; they often work part time (45%) and only about half of them do so by choice.

### Summary

From 1997 to 2003, temporary workers earned 16% less per hour, on average, than their permanent counterparts. The gap varied greatly depending on the type of temporary employment. Contract employees posted the smallest gap relative to permanent employees (-4% for women and -9% for men in 2003). Seasonal and casual employment and employment obtained through an agency showed larger gaps (-28%, -24% and -40% respectively).

The smaller gap observed for contract employees could be attributed to their high level of education and the numerous skills required by their positions. In general, the characteristics of workers holding other types of temporary employment (age, education, province of residence, workplace size, part-time employment, not being unionized, or living in a rural community) went a long way toward explaining their differences in earnings compared with permanent employees.

Industry and occupation were major factors in the case of female seasonal employees, casual employees, and those using employment agencies. This demonstrates that the gap for these employees stems partly from their concentration in poorly paid industries and in occupations that require few skills.

With respect to temporary employees in spousal relationships, when number of hours of work, earnings of other household members, and number of dependants are taken into account, contract workers continue to show the smallest gap. Male seasonal workers display a smaller gap once these factors are taken into

consideration, mainly because of the large number of hours they worked (6% more than permanent employees) and the contribution of spousal earnings.

For female seasonal employees, casual employees (73% of whom are women), and those who used employment agencies (50% women), the average earnings gap remained significant: between -24% and -28%. The gap persists despite the significant contribution of spousal earnings to total family earnings. Almost one-third of temporary employees held this type of employment. Despite their relatively high level of education, their concentration in part-time, often unskilled jobs accounts for much of their large earnings gap.

To the extent that temporary workers eventually gain access to less precarious employment, the earnings gap may prove less consequential. The study did not take into account differences related to employee benefits (such as pension plans, drug insurance, or disability insurance), an element that could tend to increase the disparity in earnings.

### Perspectives

#### ■ Notes

- 1 According to Kapsalis and Tourigny, this applies particularly to full-time temporary employment.
- 2 Despite their importance as a means of remuneration, employee benefits could not be included because of data limitations. In 1995, according to the Survey of Work Arrangements, temporary employees received distinctly fewer benefits than permanent employees (Grenon and Chun 1997).
- 3 Since temporary employment by definition cannot apply to self-employed workers, this article pertains only to employees.
- 4 The Labour Force Survey has included data on earnings since 1997 only.
- 5 In this article, 'contract employment' includes employment for a set period of time.
- 6 The 1.7% gap for those in the 15 to 17 age group was significantly different (at the 5% level) from the -1.9% recorded for those aged 18 to 21.
- 7 The -19% gap in 2000 is significantly different (at the 5% level) from the -16% recorded in 2003.
- 8 Analyzing the earnings gap between employees in the public and private sectors is a complex issue and beyond the scope of this article.



9 The professional group includes occupations such as accounting, medicine, law and teaching, which generally require a university degree. These fall under the B0, C0, D0, D1, E0, E1 and F0 categories of the 2001 National Occupational Classification (Statistics Canada 2001).

10 Some figures do not appear in Table 5 because they correspond with the 4-figure level of detail in the National Occupational Classification.

11 Other non-observable characteristics such as differences in skills, productivity or motivation can also help to explain the earnings gaps but cannot be taken into account here.

12 These results were obtained using regressions pertaining to the logarithm of earnings of temporary and permanent employees. Average earnings for each type of temporary employment were compared with that for permanent employment, for men and women separately. The regressions included the following variables: being a temporary employee, age, age squared, province, education, working part time, being non-unionized, living in a rural area, and workplace size. The seniority of temporary and permanent employees was tested but ultimately removed from the final model since temporary employees by definition have low levels of seniority with the same employer. In a second step, for each comparison, all the above variables were included, along with the industry and occupation. Results are available on request.

13 These results were taken from a Oaxaca decomposition model involving 10 regressions (for permanent employment, for the four types of temporary employment and for both sexes). The variables included in the model were age, age squared, province, education, working part time, not being unionized, workplace size, living in a rural area, and industry and occupation.

14 Cranford, Vosko and Zukewich (2003) show that the earnings gap is larger for part-time than for full-time temporary employees.

15 For a truly complete table, it would also be necessary to include other income sources for all household members. However, this information is not part of the LFS.

16 Even larger gaps (of between -31% and -71%) were observed for workers who were lone parents or living alone and in seasonal jobs (12,000 women), jobs obtained through an employment agency, casual jobs or other (38,000 men and women) .

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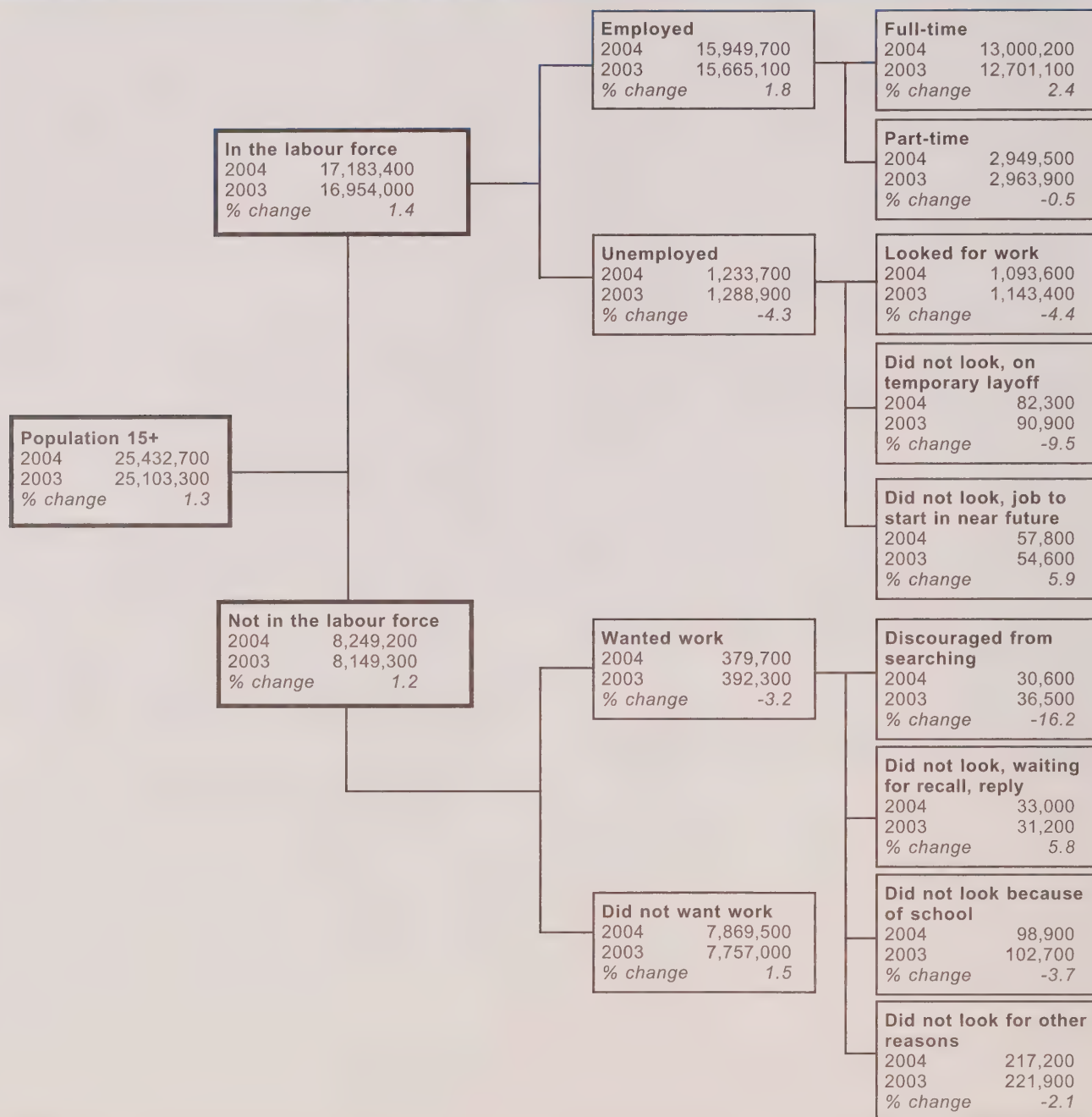
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# The labour market in 2004

## Labour force status of the population



Source: Labour Force Survey, annual averages



## Large changes for older workers

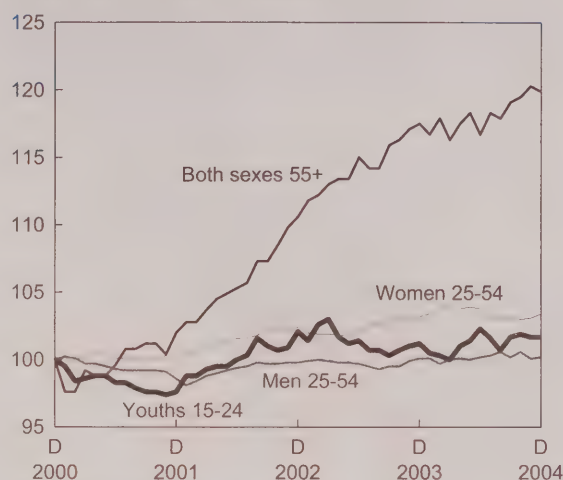
The population aged 15 and over expanded 1.3% between 2003 and 2004. Labour force growth was marginally greater, while the rate for those not in the labour force was slightly smaller.

The overall employment growth of 1.8% masks a larger increase in full-time job creation (2.4%) since the number of part-time jobs fell. The average number of unemployed fell by 4.3%.

For those not in the labour force, all of the increase was among those who did not want to work. The discouraged worker component—those who want work but despair of finding it—fell by 16.2%.

The employment rate of men and women aged 55 and over has increased almost 20% since December 2001.

Employment rate index, December 2000=100



Source: Labour Force Survey, seasonally adjusted

	December level			December-to-December change			
	2000	2003	2004	2000 to 2004	2003 to 2004	2000 to 2004	2003 to 2004
		'000		'000		%	
<b>Population 15+</b>	<b>24,246.3</b>	<b>25,242.4</b>	<b>25,596.8</b>	<b>1,350.5</b>	<b>354.4</b>	<b>5.6</b>	<b>1.4</b>
Youths 15-24	4,094.4	4,216.4	4,255.7	161.3	39.3	3.9	0.9
Men 25-54	6,862.7	6,975.9	7,018.6	155.9	42.7	2.3	0.6
Women 25-54	6,882.0	6,988.7	7,039.9	157.9	51.2	2.3	0.7
Both sexes 55+	6,407.2	7,061.4	7,282.6	875.4	221.2	13.7	3.1
<b>Employment 15+</b>	<b>14,919.3</b>	<b>15,836.8</b>	<b>16,063.1</b>	<b>1,143.8</b>	<b>226.3</b>	<b>7.7</b>	<b>1.4</b>
Youths 15-24	2,351.5	2,451.5	2,484.9	133.4	33.4	5.7	1.4
Men 25-54	5,886.2	5,989.7	6,035.4	149.2	45.7	2.5	0.8
Women 25-54	5,107.9	5,356.7	5,396.5	288.6	39.8	5.7	0.7
Both sexes 55+	1,573.7	2,038.9	2,146.3	572.6	107.4	36.4	5.3
<b>Unemployment 15+</b>	<b>1,082.7</b>	<b>1,255.2</b>	<b>1,216.9</b>	<b>134.2</b>	<b>-38.3</b>	<b>12.4</b>	<b>-3.1</b>
Youths 15-24	330.7	394.7	360.5	29.8	-34.2	9.0	-8.7
Men 25-54	361.7	388.5	392.2	30.5	3.7	8.4	1.0
Women 25-54	318.0	352.9	339.7	21.7	-13.2	6.8	-3.7
Both sexes 55+	72.2	119.0	124.5	52.3	5.5	72.4	4.6

Source: Labour Force Survey, seasonally adjusted

The aging of the baby boomers is reflected in the 3.1% growth in the population 55 and over. However, both employment (5.3%) and unemployment (4.6%) outpaced population growth in this group.

Unemployment for youths and adult women declined appreciably even as their population and employment continued to grow. Prime-aged men (25 to 54) were the only ones for whom unemployment outpaced employment.

## Unemployment rates down, employment rates up

The effect of larger cohorts with relatively high participation and employment rates reaching age 55 is pushing the employment rate among older Canadians steadily upwards (4.9 percentage points since 2000).

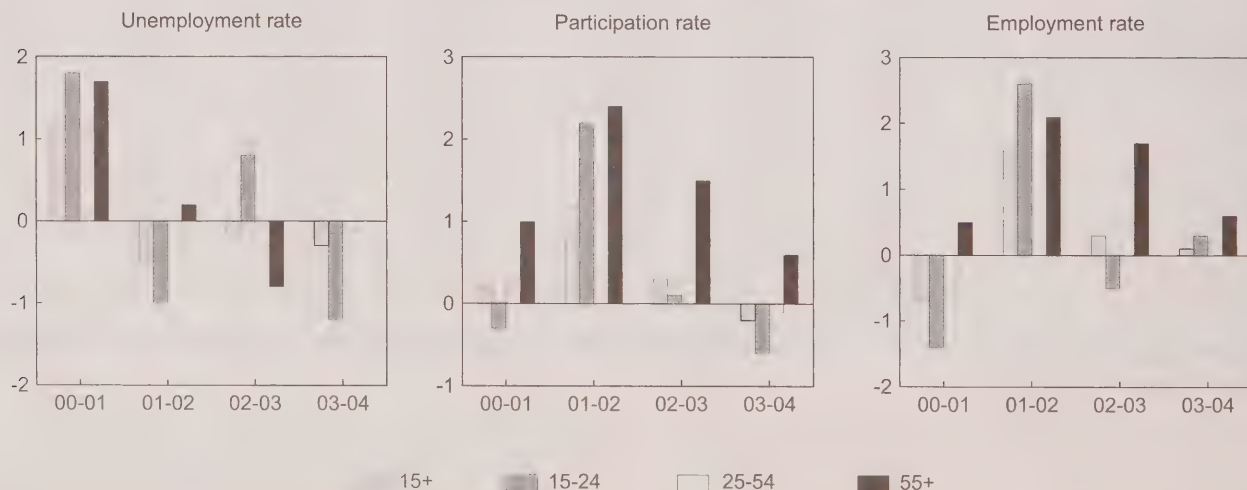
Between December 2003 and December 2004, the declining numbers of unemployed youth and prime-aged women lowered their unemployment rates—from 13.9% to 12.7% for youth and from 6.2% to 5.9% for women.

	December level			December-to-December change	
	2000	2003	2004	2000 to 2004	2003 to 2004
		%			%-point
<b>Unemployment rate 15+</b>	<b>6.8</b>	<b>7.3</b>	<b>7.0</b>	<b>0.2</b>	<b>-0.3</b>
Youths 15-24	12.3	13.9	12.7	0.4	-1.2
Men 25-54	5.8	6.1	6.1	0.3	0.0
Women 25-54	5.9	6.2	5.9	0.0	-0.3
Both sexes 55+	4.4	5.5	5.5	1.1	0.0
<b>Participation rate 15+</b>	<b>66.0</b>	<b>67.7</b>	<b>67.5</b>	<b>1.5</b>	<b>-0.2</b>
Youths 15-24	65.5	67.5	66.9	1.4	-0.6
Men 25-54	91.0	91.4	91.6	0.6	0.2
Women 25-54	78.8	81.7	81.5	2.7	-0.2
Both sexes 55+	25.7	30.6	31.2	5.5	0.6
<b>Employment rate 15+</b>	<b>61.5</b>	<b>62.7</b>	<b>62.8</b>	<b>1.3</b>	<b>0.1</b>
Youths 15-24	57.4	58.1	58.4	1.0	0.3
Men 25-54	85.8	85.9	86.0	0.2	0.1
Women 25-54	74.2	76.6	76.7	2.5	0.1
Both sexes 55+	24.6	28.9	29.5	4.9	0.6

Source: Labour Force Survey, seasonally adjusted

Although the employment rate was up at least marginally for all groups, the participation rate declined for youths and prime-aged women.

December-to-December percentage-point change

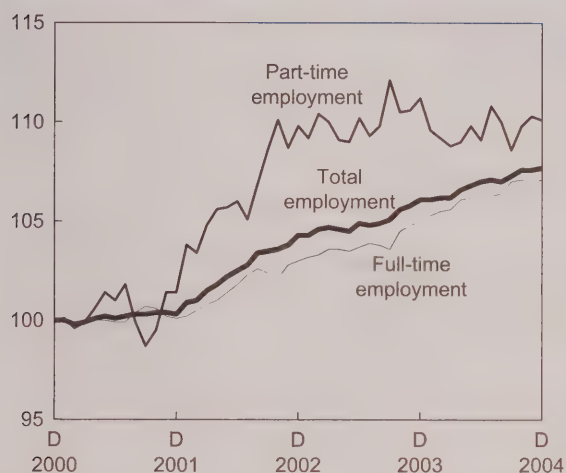


Source: Labour Force Survey, seasonally adjusted



## Full-time employment improves

December 2000=100



Source: Labour Force Survey, seasonally adjusted

Between December 2003 and December 2004, full-time employment increased by 2.0% while part-time employment fell by 1.0%, resulting in a net job gain of 1.4%. However, over the first four years of the millennium, part-time job growth (10.1%) outpaced full-time job growth (7.1%).

	Employment	Full-time	Part-time
	'000		
<b>December level</b>			
2000	14,919.3	12,227.0	2,692.4
2003	15,836.8	12,843.4	2,993.4
2004	16,063.1	13,098.7	2,964.4
<b>Absolute change</b>			
2000 to 2004	1,143.8	871.7	272.0
2003 to 2004	226.3	255.3	-29.0
	%		
<b>Percentage change</b>			
2000 to 2004	7.7	7.1	10.1
2003 to 2004	1.4	2.0	-1.0

December 2000=100



Source: Labour Force Survey, seasonally adjusted

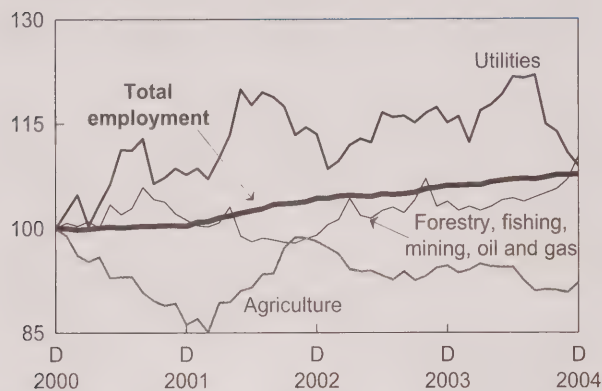
Public-sector jobs (2.5%) grew at nearly double the pace of private-sector jobs (1.3%) over the course of 2004. Self-employment continued to lag, with gains of just 0.6%.

	Total employment	Employees		Self-employed
		Public	Private	
	'000			
<b>December level</b>				
2000	14,919.3	2,834.7	9,741.1	2,343.5
2003	15,836.8	3,022.2	10,375.8	2,438.8
2004	16,063.1	3,098.7	10,511.0	2,453.4
<b>Absolute change</b>				
2000 to 2004	1,143.8	264.0	769.9	109.9
2003 to 2004	226.3	76.5	135.2	14.6
	%			
<b>Percentage change</b>				
2000 to 2004	7.7	9.3	7.9	4.7
2003 to 2004	1.4	2.5	1.3	0.6

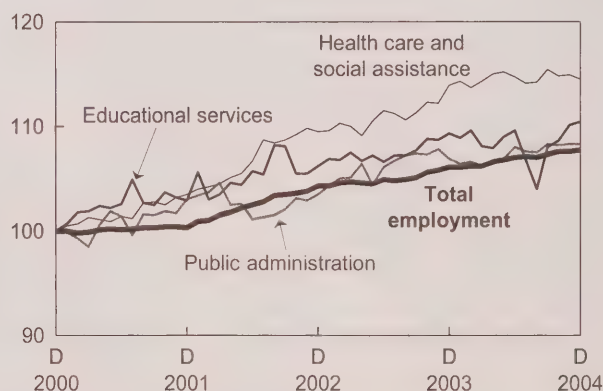
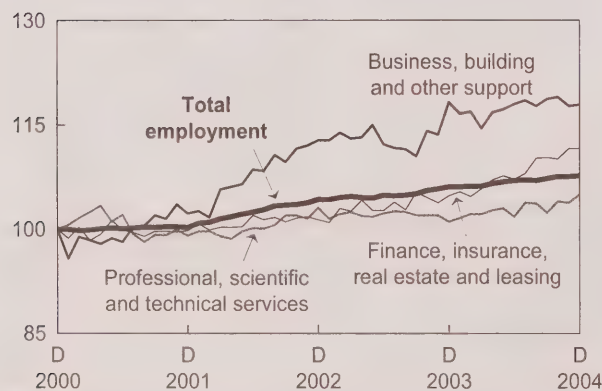
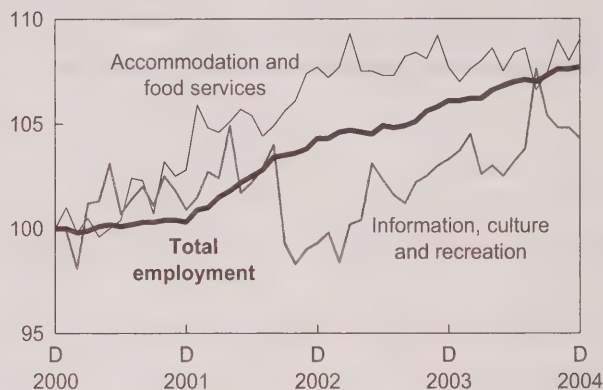
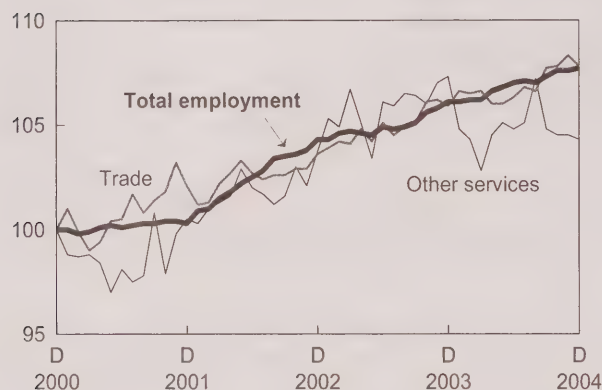
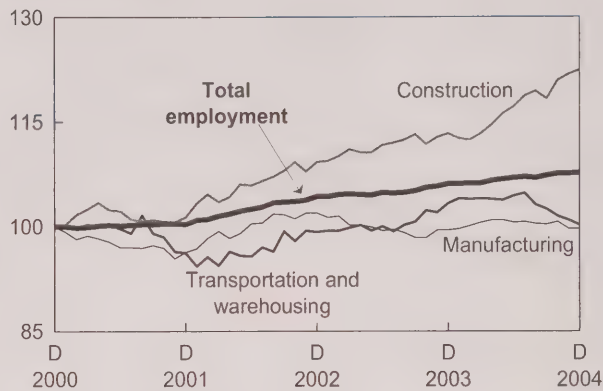
## Construction continues to be strong

Employment index

December 2000=100



December 2000=100



Source: Labour Force Survey, seasonally adjusted

The strength in construction employment over the past several years continued in 2004 with an increase of 8.0%, reflecting robust activity related to building permits and housing starts as well as low interest rates.

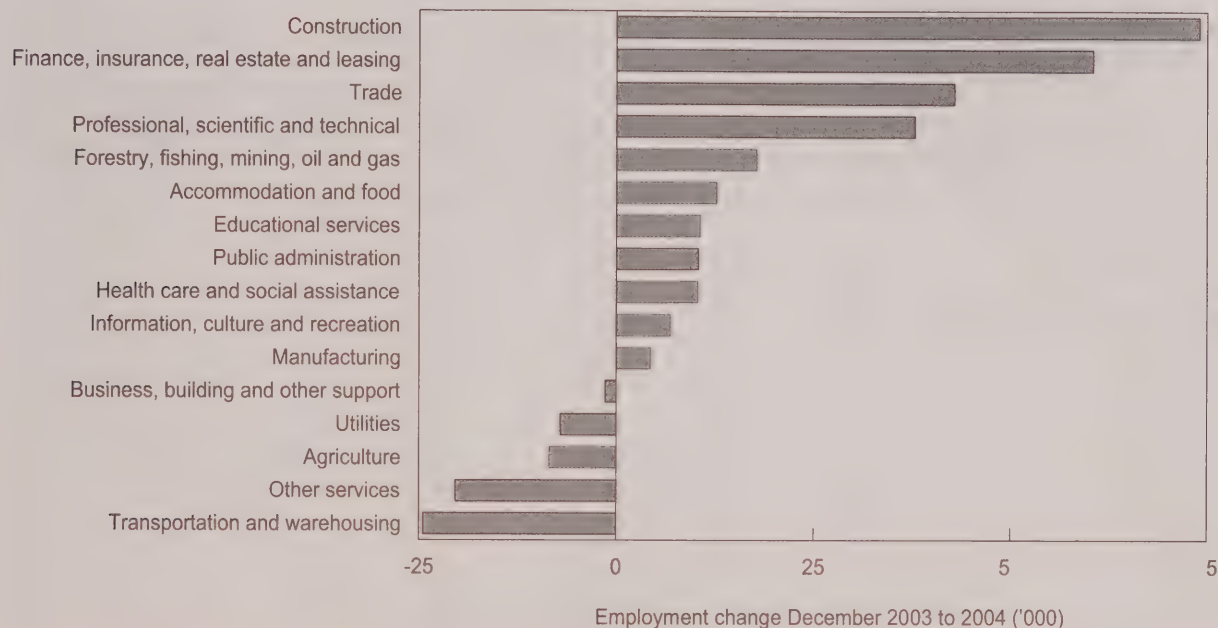
Health care and social assistance; and business, building and other support services had been strong sources of job creation from 2000 to 2003, but levelled off during 2004.



## Most industries gained in 2004

Construction also led the way in terms of number of additional jobs with 74,000. Finance, insurance, real estate and leasing followed with 60,500. Trade, and professional, scientific and technical industries

were also significant sources of new jobs in 2004. Transportation and warehousing, and other services each shed more than 20,000 jobs during the year.



Source: Labour Force Survey, seasonally adjusted

## Goods sector outperforms services

Mainly because of the strength in construction, the goods-producing sector outpaced the service-producing sector with an employment increase of 2.0% compared with 1.2%. Forestry, fishing, mining, and oil and gas again contributed to job gains in the goods-producing sector, with some offsetting job losses in utilities and agriculture.

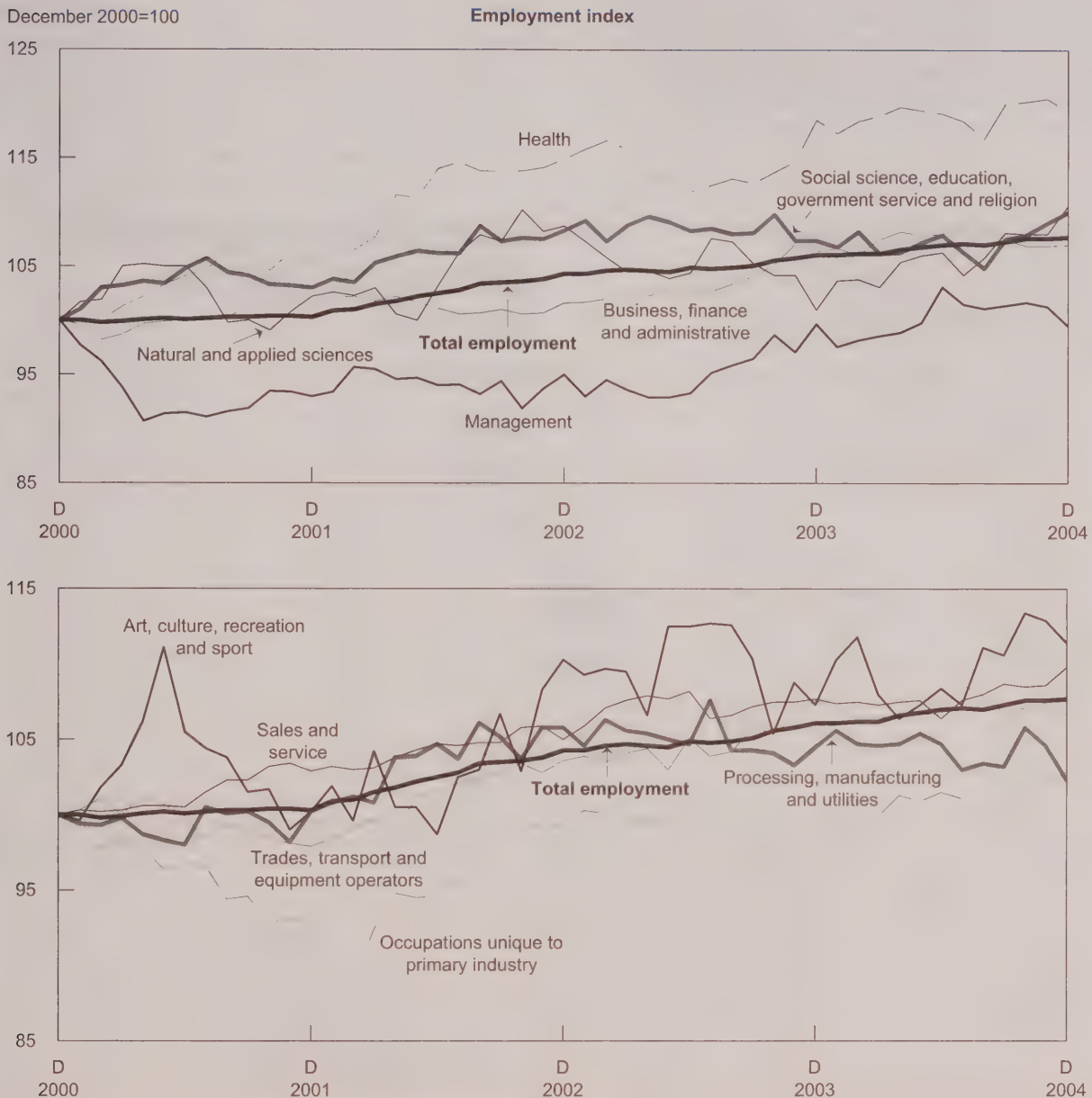
In 2004, employment also increased in finance, insurance, real estate and leasing (6.5%) and in professional, scientific and technical services (3.8%). Slower growth was seen in trade (1.7%) and in public administration, and accommodation and food (both 1.3%).

	December level			December-to-December change			
	2000	2003	2004	2000 to 2004	2003 to 2004	2000 to 2004	2003 to 2004
		'000		'000		%	
<b>All industries</b>	<b>14,919.3</b>	<b>15,836.8</b>	<b>16,063.1</b>	<b>1,143.8</b>	<b>226.3</b>	<b>7.7</b>	<b>1.4</b>
Goods-producing	3,838.7	3,943.5	4,023.9	185.2	80.4	4.8	2.0
Agriculture	349.1	330.2	321.7	-27.4	-8.5	-7.8	-2.6
Forestry, fishing, mining, oil and gas	273.1	283.4	301.2	28.1	17.8	10.3	6.3
Utilities	114.4	131.7	124.6	10.2	-7.1	8.9	-5.4
Construction	812.9	921.0	995.0	182.1	74.0	22.4	8.0
Manufacturing	2,289.2	2,277.2	2,281.5	-7.7	4.3	-0.3	0.2
Service-producing	11,080.6	11,893.3	12,039.2	958.6	145.9	8.7	1.2
Trade	2,342.0	2,481.3	2,524.2	182.2	42.9	7.8	1.7
Transportation and warehousing	785.4	811.1	786.6	1.2	-24.5	0.2	-3.0
Finance, insurance, real estate and leasing	881.7	923.9	984.4	102.7	60.5	11.6	6.5
Professional, scientific and technical	980.7	991.9	1,029.8	49.1	37.9	5.0	3.8
Business, building and other support	536.5	634.2	632.8	96.3	-1.4	17.9	-0.2
Educational services	956.9	1,046.1	1,056.7	99.8	10.6	10.4	1.0
Health care and social assistance	1,515.9	1,726.1	1,736.4	220.5	10.3	14.5	0.6
Information, culture and recreation	703.4	726.5	733.3	29.9	6.8	4.3	0.9
Accommodation and food	932.6	1,004.0	1,016.7	84.1	12.7	9.0	1.3
Other services	673.2	722.4	702.0	28.8	-20.4	4.3	-2.8
Public administration	772.2	825.8	836.2	64.0	10.4	8.3	1.3

Source: Labour Force Survey, seasonally adjusted



## Health occupations led growth over five years



Source: Labour Force Survey, seasonally adjusted

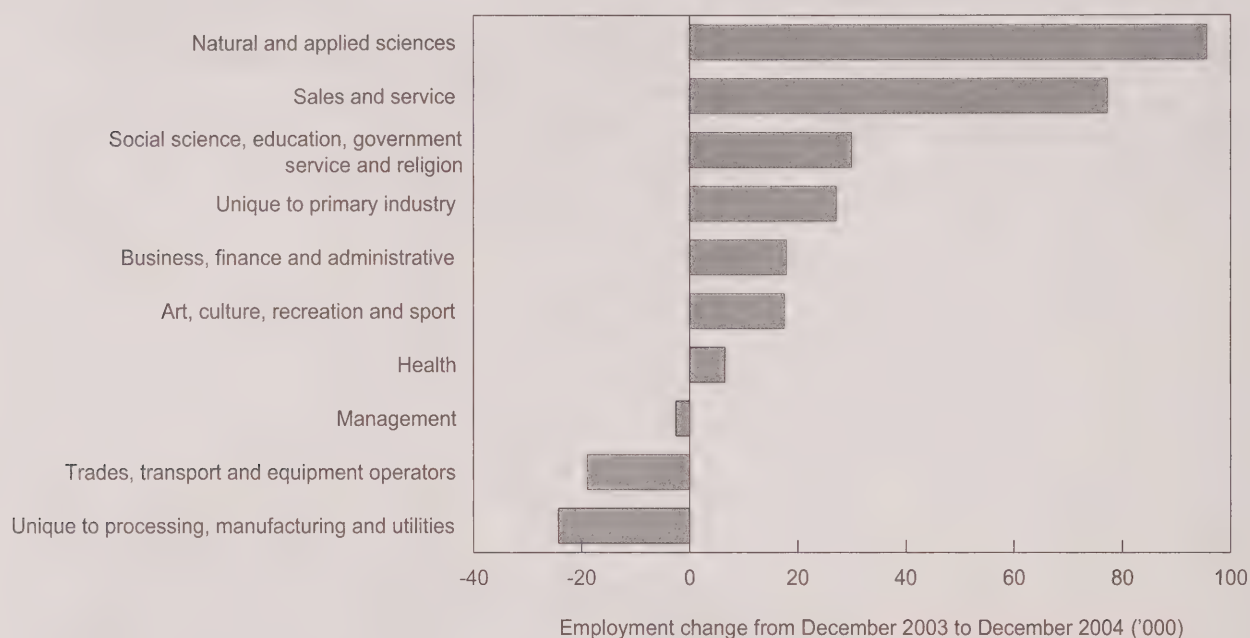
Since 2000, health occupations have led the pack with a gain of 19.3% as of December 2004. Most other occupational groups are clustered just above or just

below the average gain of 7.7%. Management was the only occupational category to lose jobs during this period.

## Natural and applied sciences led job growth in 2004

Natural and applied science occupations added 96,000 jobs (9.6%) in 2004, followed by sales and services with 77,000 (2.0%). More moderate gains in terms of number were experienced in social science, education, government service and religion occupations, and in occupations unique to primary industry.

Blue-collar occupations were the main victims of job loss in 2004. Occupations unique to processing, manufacturing and utilities lost 24,000 jobs (-2.1%), while 19,000 jobs disappeared for trades, transport and equipment operators. As for white-collar workers, there were 2,500 fewer management jobs in December 2004 than a year earlier.



	December level			December-to-December change			
	2000	2003	2004	2000 to 2004	2003 to 2004	2000 to 2004	2003 to 2004
		'000			'000	%	
<b>All occupations</b>	<b>14,919.3</b>	<b>15,836.8</b>	<b>16,063.1</b>	<b>1,143.8</b>	<b>226.3</b>	<b>7.7</b>	<b>1.4</b>
Management	1,435.1	1,430.6	1,428.1	-7.0	-2.5	-0.5	-0.2
Business, finance and administrative	2,688.5	2,859.4	2,877.3	188.8	17.9	7.0	0.6
Natural and applied sciences	988.4	997.8	1,093.4	105.0	95.6	10.6	9.6
Health	784.3	929.5	936.0	151.7	6.5	19.3	0.7
Social science, education, government service and religion	1,165.8	1,252.1	1,282.1	116.3	30.0	10.0	2.4
Art, culture, recreation and sport	424.7	455.6	473.1	48.4	17.5	11.4	3.8
Sales and service	3,564.9	3,838.3	3,915.5	350.6	77.2	9.8	2.0
Trades, transport and equipment operators	2,222.5	2,390.3	2,371.3	148.8	-19.0	6.7	-0.8
Unique to primary industry	548.6	537.5	564.6	16.0	27.1	2.9	5.0
Unique to processing, manufacturing and utilities	1,096.4	1,145.8	1,121.5	25.1	-24.3	2.3	-2.1

Source: Labour Force Survey, seasonally adjusted

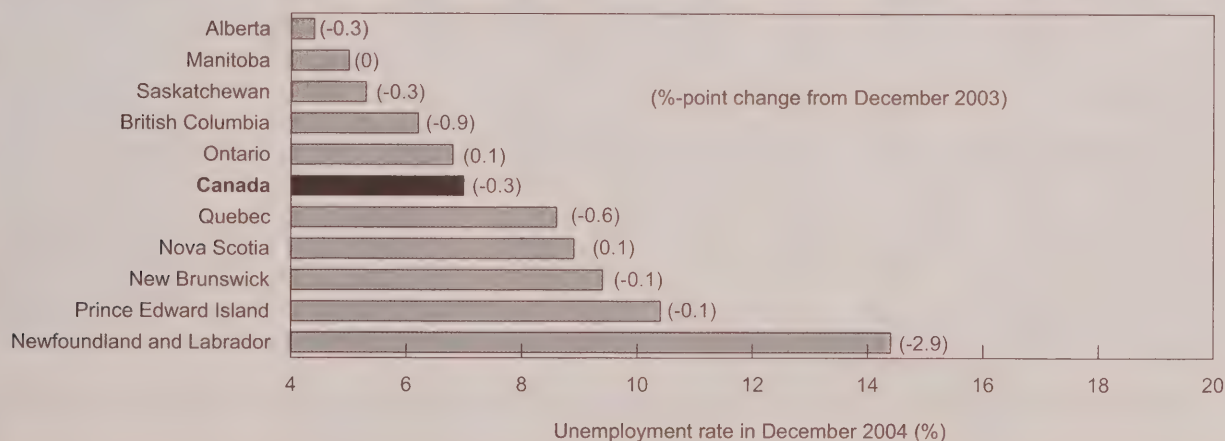


## Jobs added in all provinces

In 2004, most provinces had employment growth at or slightly above the national average of 1.4%: Prince Edward Island (2.5%), Saskatchewan (2.2%), Newfoundland and Labrador (1.8%), New Brunswick (1.8%), British Columbia (1.6%), Manitoba (1.5%) and Nova Scotia and Quebec (1.4%). In terms of number, the most jobs were added in Ontario (83,000), Quebec (51,000), British Columbia (32,000) and Alberta (22,000).

Several provinces experienced appreciable declines in their unemployment rate in 2004: Newfoundland and Labrador (-2.9 percentage points), British Columbia (-0.9), Quebec (-0.6), Saskatchewan (-0.3) and Alberta (-0.3). The unemployment rate changed very little in the remaining provinces.

	December level			December-to-December change			
	2000	2003	2004	2000 to 2004	2003 to 2004	2000 to 2004	2003 to 2004
<b>Employed</b>		'000		'000		%	
<b>Canada</b>	<b>14,919.3</b>	<b>15,836.8</b>	<b>16,063.1</b>	<b>1,143.8</b>	<b>226.3</b>	<b>7.7</b>	<b>1.4</b>
Newfoundland and Labrador	199.0	212.1	216.0	17.0	3.9	8.5	1.8
Prince Edward Island	63.2	67.0	68.7	5.5	1.7	8.7	2.5
Nova Scotia	415.0	437.2	443.4	28.4	6.2	6.8	1.4
New Brunswick	335.1	346.6	352.9	17.8	6.3	5.3	1.8
Quebec	3,421.1	3,652.6	3,703.9	282.8	51.3	8.3	1.4
Ontario	5,910.9	6,270.5	6,353.5	442.6	83.0	7.5	1.3
Manitoba	552.8	571.6	580.3	27.5	8.7	5.0	1.5
Saskatchewan	470.1	476.4	486.9	16.8	10.5	3.6	2.2
Alberta	1,607.5	1,745.9	1,768.1	160.6	22.2	10.0	1.3
British Columbia	1,944.7	2,057.1	2,089.5	144.8	32.4	7.4	1.6
<b>Unemployed</b>							
<b>Canada</b>	<b>1,082.7</b>	<b>1,255.2</b>	<b>1,216.9</b>	<b>134.2</b>	<b>-38.3</b>	<b>12.4</b>	<b>-3.1</b>
Newfoundland and Labrador	40.4	44.4	36.2	-4.2	-8.2	-10.4	-18.5
Prince Edward Island	8.2	7.9	8.0	-0.2	0.1	-2.4	1.3
Nova Scotia	41.7	42.0	43.2	1.5	1.2	3.6	2.9
New Brunswick	36.7	36.5	36.5	-0.2	0.0	-0.5	0.0
Quebec	295.4	368.1	348.6	53.2	-19.5	18.0	-5.3
Ontario	377.3	453.6	465.5	88.2	11.9	23.4	2.6
Manitoba	28.8	30.0	30.8	2.0	0.8	6.9	2.7
Saskatchewan	25.2	28.1	27.1	1.9	-1.0	7.5	-3.6
Alberta	81.7	86.7	82.3	0.6	-4.4	0.7	-5.1
British Columbia	147.3	157.9	138.8	-8.5	-19.1	-5.8	-12.1



Source: Labour Force Survey, seasonally adjusted

## Usual hours of work

	Employed	Usual hours, main job							Total ('000)	Avg.
		1-14	15-29	30-34	35-39	40	41-49	50+		
		'000							hours	
Total	15,949.7	916.8	2,032.7	1,102.6	3,436.3	5,950.3	1,012.4	1,498.5	581,533.9	36.5
Industry										
Agriculture	324.1	26.4	30.8	19.5	14.2	71.1	25.6	136.6	14,848.3	45.8
Forestry, fishing, mining, oil and gas	285.7	5.3	7.9	6.7	20.6	133.6	33.2	78.4	12,996.8	45.5
Utilities	133.0	0.0	3.0	8.9	50.0	63.4	4.1	3.3	5,077.2	38.2
Construction	952.8	21.7	52.3	45.8	79.1	460.5	112.6	180.8	39,209.1	41.2
Manufacturing	2,297.0	27.9	59.0	49.5	294.0	1,538.9	224.0	103.7	91,121.1	39.7
Trade	2,503.6	199.5	485.6	200.8	333.0	926.3	163.7	194.6	85,819.1	34.3
Transportation and warehousing	809.3	21.0	73.9	38.3	93.6	349.4	60.3	172.9	33,397.8	41.3
Finance, insurance, real estate and leasing	955.0	38.1	98.3	55.6	382.9	262.8	36.9	80.4	34,926.2	36.6
Professional, scientific and technical	1,010.1	46.4	95.5	52.5	256.3	373.4	53.0	133.0	38,286.1	37.9
Business, building and other support	630.1	48.9	92.0	51.3	112.2	243.0	40.0	42.6	21,905.8	34.8
Educational services	1,038.4	108.0	165.1	113.5	300.3	275.6	30.1	45.7	33,578.9	32.3
Health care and social assistance	1,736.7	93.6	344.4	197.0	609.3	329.4	58.2	104.8	58,787.4	33.9
Information, culture and recreation	732.7	73.6	102.3	53.5	191.5	232.4	26.9	52.4	24,872.6	33.9
Accommodation and food	1,006.8	126.5	279.5	121.0	109.4	248.8	43.4	78.2	31,402.1	31.2
Other services	705.1	64.6	101.8	55.3	100.7	243.6	60.6	78.6	24,947.5	35.4
Public administration	829.2	15.0	41.3	33.6	489.2	197.9	39.7	12.4	30,358.0	36.6
Occupation										
Management	1,438.6	23.8	62.0	49.3	316.2	540.2	125.3	321.7	61,012.4	42.4
Business, finance and administrative	2,890.7	139.6	333.9	189.7	1,058.1	977.4	96.5	95.4	101,567.8	35.1
Natural and applied sciences	1,048.5	17.6	37.3	31.6	374.1	473.6	51.1	63.2	40,575.7	38.7
Health	933.1	40.4	200.9	111.0	307.6	178.6	37.7	56.8	31,745.5	34.0
Social science, education, government service and religion	1,251.4	83.8	180.1	119.2	383.2	327.0	48.3	109.8	43,431.7	34.7
Art, culture, recreation and sport	466.7	62.9	78.3	39.6	103.7	116.7	17.3	48.4	15,276.2	32.7
Sales and service	3,846.7	452.5	940.8	415.2	554.9	1,109.4	194.5	179.4	119,787.3	31.1
Trades, transport and equipment operators	2,378.2	44.1	123.8	92.0	207.6	1,266.5	268.0	376.2	97,817.6	41.1
Unique to primary industry	552.4	35.8	39.3	28.2	29.0	161.7	49.3	209.1	25,159.1	45.5
Unique to processing, manufacturing and utilities	1,143.5	16.2	36.3	26.8	101.8	799.4	124.4	38.6	45,160.7	39.5

Source: Labour Force Survey, annual averages

Workers in primary industries and occupations worked the most hours in 2004; those in sales and service jobs, the least.



## Overtime hours

	Employees at work		Proportion of workers putting in overtime					
	Total	Overtime	2004			Change, 2003 to 2004		
			Total	Paid	Unpaid	Total	Paid	Unpaid
	'000			%		%-point		
<b>Total</b>	<b>12,415.6</b>	<b>2,666.4</b>	<b>21.5</b>	<b>10.5</b>	<b>11.7</b>	<b>-0.2</b>	<b>0.1</b>	<b>-0.4</b>
<b>Industry</b>								
Agriculture	111.2	13.2	11.9	6.7	4.9	0.6	0.6	0.1
Forestry, fishing, mining, oil and gas	217.6	66.1	30.4	21.2	10.2	0.6	1.7	-1.4
Utilities	121.6	35.8	29.4	19.1	11.9	-2.2	0.0	-1.9
Construction	610.7	127.5	20.9	16.0	5.5	1.4	1.3	0.2
Manufacturing	2,047.3	569.8	27.8	19.8	8.6	1.1	1.1	-0.1
Trade	2,060.7	314.3	15.3	7.1	8.6	-0.2	-0.3	0.0
Transportation and warehousing	608.2	141.5	23.3	15.3	8.6	0.3	-0.7	0.9
Finance, insurance, real estate and leasing	741.9	166.9	22.5	6.1	17.1	-1.1	0.4	-1.6
Professional, scientific and technical	610.3	170.4	27.9	9.0	19.8	-0.3	0.0	-0.6
Business, building and other support	452.2	71.6	15.8	9.8	6.5	-1.0	-0.3	-0.7
Educational services	840.5	288.2	34.3	2.8	32.0	-1.5	0.2	-1.6
Health care and social assistance	1,350.6	240.7	17.8	8.4	10.5	-0.6	-0.7	0.1
Information, culture and recreation	570.5	114.1	20.0	7.8	12.8	-1.0	-0.4	-0.9
Accommodation and food	871.3	88.1	10.1	5.7	4.9	-0.5	-0.1	-0.3
Other services	446.7	77.5	17.3	7.8	10.2	-0.7	0.2	-0.9
Public administration	754.2	180.8	24.0	9.5	15.9	-1.0	-0.3	-1.0
<b>Occupation</b>								
Management	878.2	365.2	41.6	4.3	38.2	0.0	0.1	-0.1
Business, finance and administrative	2,435.7	448.1	18.4	7.6	11.4	-0.1	0.4	-0.6
Natural and applied sciences	850.9	243.0	28.6	12.0	17.8	-1.8	-0.6	-1.5
Health	709.5	134.9	19.0	11.1	9.3	-0.3	-0.7	0.5
Social science, education, government service and religion	937.5	325.8	34.8	3.8	31.7	-1.5	-0.3	-1.2
Art, culture, recreation and sport	270.6	53.3	19.7	7.3	13.4	-2.4	-1.1	-1.3
Sales and service	3,235.4	372.7	11.5	6.3	5.7	-0.7	-0.2	-0.6
Trades, transport and equipment operators	1,821.8	434.3	23.8	21.0	3.5	0.8	0.8	0.0
Unique to primary industry	255.6	46.0	18.0	13.0	4.5	1.5	0.6	-0.3
Unique to processing, manufacturing and utilities	1,020.4	243.0	23.8	21.6	2.7	0.9	1.2	-0.3

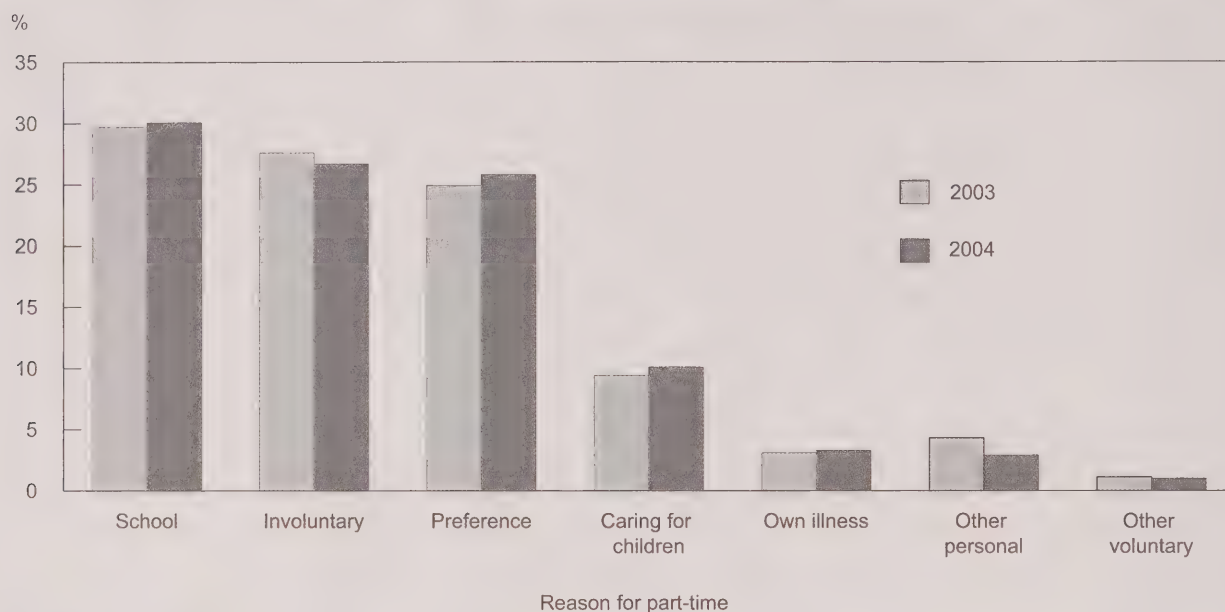
Source: Labour Force Survey, annual averages

Note: Some workers do both paid and unpaid overtime in the same week.

While overtime workers in goods production and transportation tended to be paid for their extra hours, most workers in the service sector were not paid for any extra hours.

## Part-time work

In 2004, the percentage of workers who involuntarily worked part time decreased slightly, while part-time work increased among those attending school.



Source: Labour Force Survey, annual averages

The bulk of part-time workers continue to be youth and adult women. Almost three-quarters of young part-timers work short hours voluntarily because of school; among adults, about 40% prefer part-time hours.

2004	Total, part- time	Voluntary part-time						Involuntary part-time		
		Own illness	Caring for children	Other personal	School	Prefer- ence	Other	Total	Looked for full-time	Did not look for full-time
	'000					%				
<b>Total</b>	<b>2,949.5</b>	<b>3.3</b>	<b>10.1</b>	<b>2.9</b>	<b>30.1</b>	<b>25.8</b>	<b>1.0</b>	<b>26.7</b>	<b>8.3</b>	<b>18.4</b>
Youths 15-24	1,098.7	0.7	1.0	0.7	72.6	5.2	0.3	19.5	7.4	12.1
Men	467.6	0.8	0.0	0.5	75.0	4.5	0.0	19.0	7.3	11.7
Women	631.1	0.6	1.7	0.8	70.9	5.7	0.4	19.9	7.5	12.4
Adults 25+	1,850.8	4.9	15.5	4.2	4.8	38.1	1.4	31.0	8.9	22.1
Men	453.7	6.9	1.8	1.8	7.8	42.5	2.0	37.2	13.0	24.2
Women	1,397.1	4.3	20.0	5.0	3.8	36.7	1.2	28.9	7.5	21.4

Source: Labour Force Survey, annual averages

## Earnings

	Hourly wage in 2004				Change from 2003			
	Both sexes	Men	Women	Ratio	Both sexes	Men	Women	Ratio
		\$				\$		
15+	18.50	20.15	16.79	0.83	0.45	0.40	0.52	0.01
15-24	10.49	11.01	9.96	0.90	0.13	0.14	0.12	0.00
25-54	20.18	21.98	18.33	0.83	0.51	0.47	0.57	0.01
55+	20.29	22.59	17.68	0.78	0.44	0.14	0.78	0.03

Source: Labour Force Survey, annual averages

Women working for a wage or salary earned 83 cents for every dollar earned by men in 2004, virtually unchanged from the year before. For those under 25, the ratio remained at 90 cents.

By industry, employees in utilities continued to make the most. Among the major occupational groups, managers remained the best paid, with weekly earnings almost triple those of the lowest group—sales and service workers.

	Hourly wage				Weekly wage			
	2003	2004	Change		2003	2004	Change	
		\$		%		\$		%
<b>Total</b>	<b>18.05</b>	<b>18.50</b>	<b>0.45</b>	<b>2.5</b>	<b>662.56</b>	<b>679.74</b>	<b>17.18</b>	<b>2.6</b>
<b>Industry</b>								
Agriculture	11.62	11.85	0.23	2.0	456.06	461.79	5.73	1.3
Forestry, fishing, mining, oil and gas	22.65	23.21	0.56	2.5	982.75	1,015.22	32.47	3.3
Utilities	26.90	27.81	0.91	3.4	1,033.34	1,062.61	29.27	2.8
Construction	19.22	19.53	0.31	1.6	777.02	792.03	15.01	1.9
Manufacturing	18.93	19.33	0.40	2.1	751.29	768.37	17.08	2.3
Trade	13.72	14.08	0.36	2.6	487.38	501.81	14.43	3.0
Transportation and warehousing	18.52	18.76	0.24	1.3	737.85	746.95	9.10	1.2
Finance, insurance, real estate and leasing	19.66	20.35	0.69	3.5	730.86	754.61	23.75	3.2
Professional, scientific and technical	22.74	23.34	0.60	2.6	863.67	887.27	23.60	2.7
Business, building and other support	13.55	13.87	0.32	2.4	494.61	505.98	11.37	2.3
Educational services	23.17	23.86	0.69	3.0	776.47	798.21	21.74	2.8
Health care and social assistance	19.03	19.63	0.60	3.2	627.35	653.38	26.03	4.1
Information, culture and recreation	17.81	18.33	0.52	2.9	632.81	650.91	18.10	2.9
Accommodation and food	10.25	10.40	0.15	1.5	318.42	321.93	3.51	1.1
Other services	14.99	15.44	0.45	3.0	542.04	556.70	14.66	2.7
Public administration	24.07	24.61	0.54	2.2	893.19	911.12	17.93	2.0
<b>Occupation</b>								
Management	28.46	29.46	1.00	3.5	1,143.64	1,180.77	37.13	3.2
Business, finance and administrative	17.34	17.76	0.42	2.4	621.23	637.71	16.48	2.7
Natural and applied sciences	25.58	26.31	0.73	2.9	986.09	1,013.98	27.89	2.8
Health	21.15	22.01	0.86	4.1	698.09	734.44	36.35	5.2
Social science, education, government service and religion	23.49	24.40	0.91	3.9	805.10	832.40	27.30	3.4
Art, culture, recreation and sport	17.73	18.64	0.91	5.1	590.89	629.75	38.86	6.6
Sales and service	12.30	12.33	0.03	0.2	406.66	405.97	-0.69	-0.2
Trades, transport and equipment operators	18.21	18.42	0.21	1.2	736.33	746.71	10.38	1.4
Unique to primary industry	14.96	15.27	0.31	2.1	641.92	659.92	18.00	2.8
Unique to processing, manufacturing and utilities	16.00	16.30	0.30	1.9	634.80	646.57	11.77	1.9

Source: Labour Force Survey, annual averages



## Unionization, moonlighting, temporary jobs

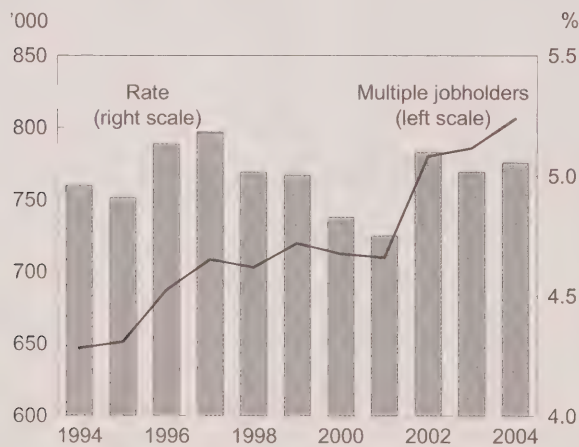
	2004			Change, 2003 to 2004		
	Total employees	Employees covered by union contract		Total employees	Employees covered by union contract	
	'000		%	'000		% pt.
<b>Total</b>	<b>13,497.9</b>	<b>4,286.6</b>	<b>31.8</b>	<b>232.7</b>	<b>2.0</b>	<b>-0.5</b>
Public sector	3,053.5	2,306.0	75.5	89.0	66.4	0.0
Private sector	10,444.4	1,980.5	19.0	143.6	-64.5	-0.9
Agriculture	116.8	6.2	5.3	-0.6	1.6	1.4
Forestry, fishing, mining, oil and gas	236.6	59.6	25.2	3.4	-2.4	-1.4
Utilities	132.8	95.2	71.7	2.5	2.2	0.3
Construction	642.1	207.4	32.3	14.2	-7.6	-1.9
Manufacturing	2,203.1	689.3	31.3	10.3	-22.7	-1.2
Trade	2,201.5	311.8	14.2	45.0	-2.5	-0.4
Transportation and warehousing	667.8	285.6	42.8	20.5	2.6	-1.0
Finance, insurance, real estate and leasing	807.9	81.2	10.1	38.5	3.9	0.0
Professional, scientific and technical services	651.4	36.2	5.6	1.3	0.8	0.1
Business, building and other support	484.1	65.2	13.5	18.0	-3.3	-1.2
Educational services	990.9	721.0	72.8	11.7	11.3	0.3
Health care and social assistance	1,521.3	835.4	54.9	43.8	18.0	-0.4
Information, culture and recreation	614.0	166.8	27.2	12.5	2.9	-0.1
Accommodation and food	921.3	67.2	7.3	10.9	-6.4	-0.8
Other services	477.2	49.6	10.4	-8.2	-3.9	-0.6
Public administration	829.1	609.0	73.5	9.1	7.5	0.1

Source: Labour Force Survey, annual averages

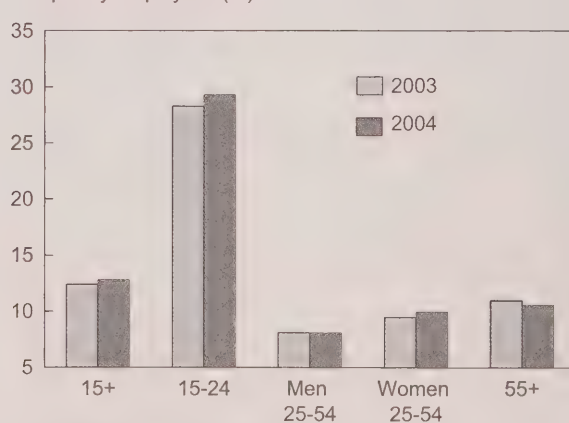
The number of unionized workers in the private sector fell by almost 65,000 in 2004; the largest drop in the unionization rate was in construction.

While the number of 'moonlighters' continues to increase, their share of total employment remained just over 5%.

About 13% of all employees worked on a temporary basis. For youths, the proportion was more than twice as high.



Temporary employees (%)



Source: Labour Force Survey, seasonally adjusted

# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Income inequality in Canada from an international perspective*

Income inequality can be measured by the ratio of the income of a family at the 90<sup>th</sup> percentile (90% of families have lower incomes and only 10% have higher incomes) to a family at the 10<sup>th</sup> percentile (90% have higher family incomes and only 10% lower).

In the late 1990s, families at the 90<sup>th</sup> percentile in Canada had incomes about 4 times higher than that of their counterparts at the 10<sup>th</sup> percentile. This ratio was 5.4 in the United States and 4.5 in the United Kingdom. In the mainland European countries included in the study (Germany, Netherlands, Belgium, Finland and Sweden), it ranged from 2.9 to 3.3.

Canada largely avoided the rise in income inequality evident in the United States and the United Kingdom throughout the 1980s and early 1990s. However, this began to change during the 1990s when gains associated with economic expansion in Canada went mainly to higher-income families.

While incomes among the richest 20% of families were rising by about 10%, they stagnated among the poorest 20% between 1990 and 2000. The result was a moderate increase in family income inequality. In addition, the mid-1990s saw an unexpected increase in the low-income rate in Canada as it deviated from its expected trend based on the unemployment rate. As unemployment fell in the mid-1990s, the low-income rate continued to rise. This may be attributed to earnings difficulties among poorer families and declining social transfers in the mid to late 1990s. By 2001, the low-income rate appeared to be back to its expected long-term trend as indicated by the unemployment rate.

For more information, see the February 10, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Are good jobs disappearing in Canada?*

In 2004, 11% of all employees aged 25 to 64 were employed in jobs that paid \$30 or more per hour. This was higher than the 9% observed in 1981. However, newly hired employees (less than two years of seniority) lost ground relative to those with greater seniority during that period. For instance, newly hired men aged 25 to 64 saw their median wages drop 13% between 1981 and 2004. In contrast, their counterparts with more than two years of seniority saw their wages increase 4%.

In general, newly hired men and women, both young and older, suffered a decline in their wages relative to their counterparts with greater seniority. Relative wages of new employees fell among university graduates as well as less educated workers. Wages dropped in manufacturing as well as in other industries. Also, newly hired employees have been increasingly employed in temporary jobs since the late 1980s. Of all private-sector employees recently hired in 1989, 11% had a temporary job. In 2004, the corresponding proportion was almost twice as high, at 21%.

Median wages of Canadian workers changed little over the last two decades. Despite the growing experience and educational attainment of the workforce, median hourly wages of employees aged 25 to 64 were only 2% higher in 2004 than in 1981. During that period, the relative importance of well-paid jobs in the Canadian labour market did not decline. Of all workers aged 25 to 64, 22% earned \$25 or more per hour in 2004. In 1981, 18% did so.

While the percentage of Canadian workers holding well-paid jobs did not decline, the proportion employed in low-paid jobs did not increase. In 2004, 16% of employees aged 25 to 64 earned less than \$10 per hour. In 1981, 17% received these pay rates.

For more information, see the January 26, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Measurement issues in comparing Canadian and U.S. productivity**

This study addresses two main issues. The first concerns the comparability of the measures of gross domestic product (GDP) and labour inputs that Canada and the United States produce. Second, it examines how a price index can be constructed to reconcile estimates of Canadian and U.S. GDP per hour worked, which are calculated in Canadian and U.S. dollars respectively.

Productivity measures provide an indicator of the efficiency of the economy in that they compare the amount of output that is produced per unit of input devoted to the production process. Labour productivity is defined as the amount of output per unit of labour input. The former is usually measured in terms of GDP and the latter as employment or hours worked.

The paper approaches the first issue by harmonizing output and labour input measures between the two countries. Harmonizing output measures required no adjustments since the two countries now use quite similar methods to estimate GDP.

Harmonizing the measures of labour input required major modifications. In this case, an estimate of U.S. hours worked per job was derived from a U.S. survey that is comparable to the one used in Canada and a similar adjustment methodology to that used in Canada was employed to derive an estimate of the annual volume of U.S. hours worked. The impact of doing so increased the official U.S. estimates of labour inputs and, therefore, reduced differences in labour productivity levels from those usually quoted by analysts who do not make allowance for differences in data sources and methodology.

Constructing a price index that can be applied to the two separate estimates of productivity (one in Canadian dollars and one in U.S. dollars) is more difficult than reconciling the estimates of GDP and labour. A price index is required to transform Canadian GDP per hour worked calculated in Canadian dollars and U.S. GDP per hour worked calculated in U.S. dollars to a common price structure. The purchasing power prices (PPP) produced by Statistics Canada are used to examine differences in standards of living, not productivity differences.

To adapt the price relative derived from the PPPs to a price relative for a productivity comparison, assumptions must be made about two issues: whether Canadian exports are priced slightly below U.S. competitors' prices in order to penetrate U.S. markets, or whether imports end up at landed prices slightly above the U.S. price corrected for the exchange rate.

The estimate of the relative Canada-U.S. productivity level is sensitive to the assumption made in this area. If we assume export and import prices are translated directly from one currency to another by the exchange rate (the law of one price), the overall Canadian economy was only about 94% as productive as that of the United States in 1999. If we allow for a 10 percentage-point deviation from this assumption, then the productivity gap disappears.

For more information, see the January 20, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Productivity and the output gap between Canada and the U.S.**

Canada's economic output per person is lower than that in the United States, but not primarily because Canadians are less productive.

Between 1994 and 2002, Canadian GDP per capita averaged only 83% of that in the U.S. This gap comes primarily from lower levels of labour input, that is, Canadians work fewer hours per job and are less likely to have a job. Labour input into the production of goods and services can be broken down into two main components: hours worked per job, and jobs per capita. Substantial differences between Canada and the U.S. existed in each area.



Between 1994 and 2002, hours worked per job in Canada averaged only 95% of hours in the U. S. The number of jobs per capita in Canada was only 94% of that in the U.S. As a result, Canada's hours worked per capita amounted to only 88% of those in the U.S.

For more information, see the January 13, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Tourism employment in rural Canada*

Tourism accounted for about 3% of total employment in Canada's predominantly rural regions in 2003, about the same as for the economy as a whole.

The rural regions of the Atlantic provinces had the largest growth in tourism employment between 1996 and 2003. New Brunswick led with a gain of nearly 30%, followed by Newfoundland and Labrador at just over 25%. This compares with an increase of just 15% for rural regions in Canada as a whole.

Two major employment challenges for communities in rural Canada are job losses in primary-sector industries and the exodus of youth in search of work. Tourism is seen as a way to bring money into a community and maintain local employment.

Tourism employment in the predominantly rural regions of New Brunswick and Nova Scotia appears to have the greatest potential for increase. This contrasts with tourism employment in the predominantly rural region of Manitoba and Saskatchewan. There, growth is less than the Canadian average and the intensity of rural employment in tourism is low.

Also, throughout Canada, rural regions closest to urban centres took advantage of these markets to generate a 17% increase in tourism employment between 1996 and 2003. This compares with an increase of 15% in rural regions as a whole and 13% in urban regions over the same period.

In 2003, the accommodation sector was the largest source of tourism-related jobs in rural regions, accounting for over 40% of all tourism employment. In urban regions, the food and beverage industry predominated.

For more information, see the January 7, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Rural-urban income gap*

Average incomes in Canada's rural population increased in every province during the past two decades, in many cases at a faster rate than average incomes in urban areas. As a result, the income gap between the urban and rural population narrowed in six provinces between 1980 and 2000. At the same time, the share of the rural population living in low income also declined relative to the share of the urban population living in low income.

Average income in Canada's predominantly rural regions amounted to \$19,500 in 2000, up 26% from 1980. At the same time, average income in predominantly urban regions rose 22% to \$24,200.

People living in rural regions of Atlantic Canada improved their financial position more than any other rural area during the two-decade period. In percentage terms, the Atlantic provinces ranked at the top for rural income growth between 1980 and 2000.

Leading the way was New Brunswick, where rural residents recorded a 40% gain in average income from \$13,000 in 1980 to just over \$18,200 in 2000. The rural populations in each of the other Atlantic provinces saw gains of over one-third. In contrast, the average income of rural residents in Saskatchewan rose by only 9%, from \$15,900 in 1980 to \$17,400 in 2000.

The income gap between the rural and urban population narrowed in New Brunswick, Quebec, Ontario, Manitoba, Alberta and British Columbia during this period.

In 1980, 16% of Canada's rural population as a whole had average incomes below Statistics Canada's low-income cut-off. By 2000, this proportion had declined to 14%. This was in sharp contrast to urban regions, where the share of people with low incomes increased from 16% to 18%.

Overall, between 1980 and 2000, the incidence of low income in rural regions declined in all provinces, except British Columbia, where it rose from 12% to nearly 15%.

For more information, see the December 23, 2004 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Employer pension plans (trusteed pension funds)*

Over the 15 months ending June 2004, fund assets increased nearly 24%, from \$531.2 billion to \$656.1 billion, a new record high, following the financial low point set in March 2003. Before the downturn, fund assets had peaked at \$614.4 billion in September 2000.

There was only a 0.5% gain in the second quarter of 2004, however. This small gain was primarily due to a 2.2% increase in the value of the funds' foreign holdings, which represented 24.4% of all fund assets. Canadian stock market prices actually fell 0.5% over the quarter. Stock prices have risen since then, suggesting that pension fund assets continued to grow for at least the remainder of 2004.

Pension funds had revenues of \$25.8 billion and expenditures of \$8.8 billion, for a net cash flow of \$17.0 billion. This was much greater than the \$4.0 billion in the first quarter of 2004. Cash flow can vary considerably from quarter to quarter, partly because of accounting practices, but primarily because of profits or losses from stock transactions.

Employer contributions remained high at \$5.6 billion. These have been on the rise since early 2002 when they were typically half that amount. Many employers had been taking a contribution holiday up to that time, but declining asset values meant they had to start contributing again.

About 5.5 million Canadian workers belong to employer pension plans. Of these, about 4.5 million are members of trusteed plans. The remainder are covered by the consolidated revenue funds of the federal and provincial governments, or by insurance company contracts or Government of Canada annuities.

For more information, see the December 20, 2004 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ FROM OTHER ORGANIZATIONS

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### ■ *Women contract academics*

The majority of Canadian universities and colleges are publicly regulated and funded. A considerable proportion of their professoriate hold the rank of 'contract academic staff,' employees who work part time or hold temporary contract positions. Many are women. This article discusses the situation of these employees in the public and the expanding corporate universities in Canada and predicts how commercialized universities may affect employment practices in the future. See "Canadian women contract academics in the public and corporate university" by Linda Joan Paul, *Delta Kappa Gamma Bulletin* 71, no. 2 (Winter 2005): 22-28.

### ■ *Self-enforcing labour contracts*

To account for the dynamics of key macroeconomic variables, researchers incorporate various internal-propagation mechanisms in their models. In general, these mechanisms implicitly rely on the assumption of a perfect equality between the real wage and the marginal product of labour. The study proposes a theoretical validation of an internal-propagation mechanism, using a model that features a limited-commitment economy, and derives endogenous self-enforcing labour contracts that produce a different linkage between the real wage and the marginal product of labour. The risk-sharing between the entrepreneur and the worker, both faced with enforcement problems, provides an admissible explanation of the prolonged co-movements observed between consumption and labour. Since these co-movements are at the core of the persistence of the impulse response of output to exogenous technology shocks, this persistence can, in turn, be rationalized with the endogenous real rigidity emerging from the economy. In this framework, the persistence ultimately depends on the initial bargaining power and the magnitude of the risk-sharing. See "Self-enforcing labour contracts and the dynamics puzzle" by Christian Calmès, *Bank of Canada*, working paper 2005-1, January 2005.

## ■ *Work and earnings*

The article discusses the trend away from large raises and toward variable pay programs—performance-related awards that must be re-earned each year and do not permanently increase base salary. In 2004, 82% of the 360 Canadian organizations polled in Hewitt Associates' Canadian Salary Increase Survey offered variable pay, compared with 69% of companies in 2000 and 43% a decade ago. Average spending on variable pay is also increasing. Two years ago, these kinds of awards averaged 9.9% of base salary. For 2005, the average award was expected to hit 13.1%. In addition to pay, workers are more than ever looking at other factors when determining where to work. Employers who can create a compelling total work experience will have more success attracting and retaining key talent. Evidence of this shift can be seen in the growing use of non-monetary rewards, casual dress, flexible hours, telecommuting or compressed workweeks. An increase in variable pay plans creates a win-win situation: Employers can control costs and motivate high performance, while still providing programs that attract and retain employees who are willing to work hard for additional compensation. See "Work more, make more" by Todd Mathers, *Canadian Business* 78, no. 1 (December 27, 2004): 38-39.

## ■ *Working hours of the world unite?*

This article constructs new measures of worktime for Europe, North America, and Australia for the years 1870 to 1913. Great Britain began with the shortest work year and Belgium the longest. By 1913 certain continental countries were approaching British worktimes, and consistent with recent findings on real wages, annual hours in the old and new worlds had converged. Although globalization did not lead to a race to the bottom for worktimes, there is only partial evidence of a race to the top. National work routines; the outcome of different legal, labour, and political histories; and mediated relations between hours and income are all discussed. See "Working hours of the world unite? New international evidence of worktime, 1870-1913" by Michael Huberman, *Journal of Economic History* 64, no. 4 (December 2004): 964-1001.

## ■ *Welfare dependence and education*

This study compares administrative and survey data on British Columbia welfare recipients to test whether survey data are sufficiently accurate for policy-oriented research. Welfare and education data are compared with the 1994 Public Use Microdata File (British Columbia sample) of Statistics Canada's Survey of Labour and Income Dynamics (SLID). SLID significantly understates welfare dependence, and overstates education levels of welfare recipients. This study suggests that Statistics Canada should seek to use provincial administrative datasets for research, and to improve surveys such as SLID, the National Longitudinal Survey of Children and Youth, and the National Population Health Survey. See "Canada needs better data for evidence-based policy: Inconsistencies between administrative and survey data on welfare dependence and education" by Rebecca N. Warburton and William P. Warburton, *Canadian Public Policy* 30, no. 3 (September 2004): 241-255.

## ■ *When financial work incentives pay for themselves*

This paper summarizes early findings from a social experiment that provided financial incentives for new welfare recipients to leave welfare and work full time. The financial incentive was essentially a negative income tax with a requirement that people work at least 30 hours a week. Early results show that the financial incentive increased full-time employment, earnings, and income, and reduced poverty. Furthermore, at the end of the period discussed, the program was paying for itself through increased tax revenues. See "When financial work incentives pay for themselves: Evidence from a randomized social experiment for welfare recipients" by Charles Michalopoulos, Philip K. Robins and David Card, *Journal of Public Economics* 89, no. 1 (January 2005): 5-29. Special issue.

## ■ *Tax treatment of private pension savings in OECD countries*

This paper provides, for all OECD countries, an estimate of the net tax cost of contribution to a tax-favoured retirement savings plan, using a present-value



methodology. The latter takes into account the future flows of revenues forgone on accrued income and the revenues collected on benefit withdrawals corresponding to a unit contribution made in a given year. The net tax cost is first calculated for nine (five-year) age groups having different relative income levels and investment time horizons, and is then averaged across age groups.

In order to take into consideration relevant country-specific features, the paper also provides an overview of the tax treatment of private pension arrangements and alternative savings vehicles. The results indicate that the size of tax subsidy varies significantly, ranging from nearly 40% of the contribution (Czech Republic)

to around zero (Mexico, New Zealand). Over half the OECD countries incur a tax cost of more than 20%, but most OECD countries incur a cost of at least 10%. On the basis of contributions made in 2000, this paper finds that the present-value estimates of overall budgetary cost of tax-favoured private pensions, vary from over 1.7% of GDP (Australia, Ireland, United Kingdom) to less than 0.2% (Japan, Slovak Republic). See "Tax treatment of private pension savings in OECD countries and the net tax cost per unit of contribution to tax-favoured schemes" by Kwang-Yeol Yoo and Alain de Serres, OECD working paper no. 406, October 2004.

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**Perspectives**

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# Key labour and income facts

## *Selected charts and analysis*

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; [bourjoa@statcan.ca](mailto:bourjoa@statcan.ca).

### **Administrative data**

#### *Small area and administrative data*

Frequency: Annual  
Contact: Customer Services  
(613) 951-9720

### **Business surveys**

#### *Annual Survey of Manufactures*

Frequency: Annual  
Contact: Dissemination agent  
(613) 951-9497

#### *Annual Surveys—Service Industries*

Frequency: Annual  
Contact: Lucie Lussier  
(613) 951-0410

#### *Business Conditions Survey of Manufacturing Industries*

Frequency: Quarterly  
Contact: Claude Robillard  
(613) 951-3507

### **Census**

#### *Census labour force characteristics*

Frequency: Quinquennial  
Contact: Michel Côté  
(613) 951-6896

#### *Census income statistics*

Frequency: Quinquennial  
Contact: John Gartley  
(613) 951-6906

### **Employment and income surveys**

#### *Labour Force Survey*

Frequency: Monthly  
Contact: Marc Lévesque  
(613) 951-4090

#### *Survey of Employment, Payrolls and Hours*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4090

#### *Employment Insurance Statistics Program*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4090

#### *Major wage settlements*

Workplace Information Directorate  
(Human Resources and Skills Development Canada)  
Frequency: Quarterly  
Contact: (819) 997-3117  
1 800 567-6866

#### *Labour income*

Frequency: Quarterly  
Contact: Anna MacDonald  
(613) 951-3784

#### *Survey of Labour and Income Dynamics*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Financial Security*

Frequency: Occasional  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Household Spending*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

### **General social survey**

#### *Education, work and retirement*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Social and community support*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Time use*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

### **Pension surveys**

#### *Pension Plans in Canada Survey*

Frequency: Annual  
Contact: Patricia Schembari  
(613) 951-9502

#### *Quarterly Survey of Trusteed Pension Funds*

Frequency: Quarterly  
Contact: Bob Anderson  
(613) 951-4034

### **Special surveys**

#### *Survey of Work Arrangements*

Frequency: Occasional  
Contact: Ernest B. Akyeampong  
(613) 951-4624

#### *Adult Education and Training Survey*

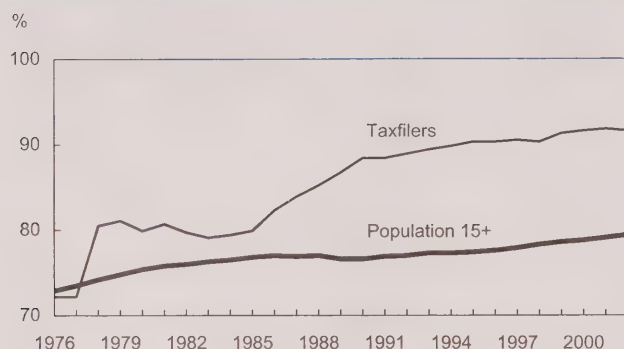
Frequency: Occasional  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Graduate Surveys*

(Postsecondary)  
Frequency: Occasional  
Contact: Client Services  
(613) 951-7608

# Taxfilers: 1972-2002

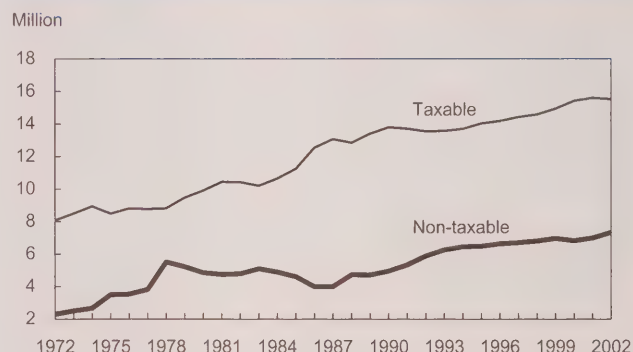
## Overall proportion of population 15 and over and those who filed a tax return



Canada's population is aging. Persons 15 and over accounted for 79.4% of the total population of 31.4 million in 2002 compared with 72.9% of the 23.4 million in 1976. The proportion of taxfilers grew even more—from 72.2% to 91.6%. Part of the growth can be attributed to the steady increase since the late 1980s in those with little or no income filing a return to claim GST or other tax credits, and partly to the increase in those receiving employment, investment and pension income, and government transfers.

In 1972, just over 10 million Canadians filed a tax return, with over three-quarters paying tax. Thirty years later, the number had reached almost 23 million with more than two-thirds paying tax. Although a higher proportion of the population were taxfilers in 2002, the growth in non-taxable returns outweighed the growth in taxable returns.

## Returns filed by tax status

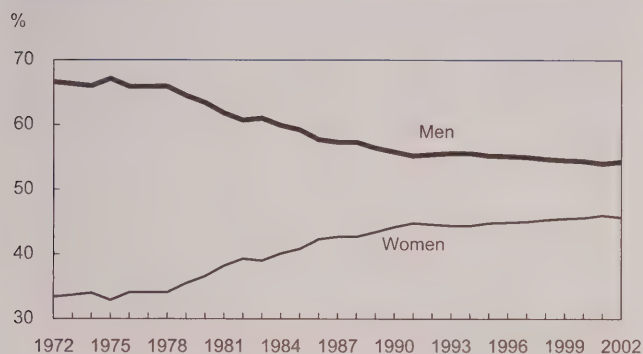


## Data sources

Tax data come from the Canada Revenue Agency, other data from Statistics Canada. For further information, contact Raj Chawla at (613) 951-6901 or [raj.chawla@statcan.ca](mailto:raj.chawla@statcan.ca).



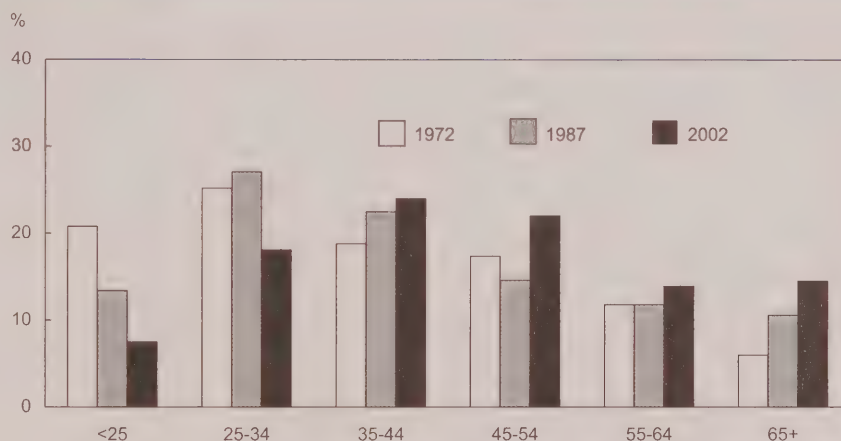
### Taxable returns filed by men and women



Not only were more women employed in 2002 than in 1972, but more were also heading lone-parent families or living by themselves as elderly. As expected, the number of women filing returns rose steadily. The discrepancy between men and women in filing taxable returns diminished over the 30-year period, with women filing 46% of such returns in 2002 compared with 33% in 1972.

The aging of the population is also apparent in the shift in age distribution of those who filed taxable returns. Taxfilers were fairly young in 1972. About 46% were under 35, and only 6% were 65 or more. By 2002, these proportions were 26% and 14%. However, relatively more taxfilers were aged 45 to 54 in 2002 than in 1972; this is the age bracket when incomes tend to peak.

### Taxable returns by age of taxfiler



### Median age of those filing taxable returns

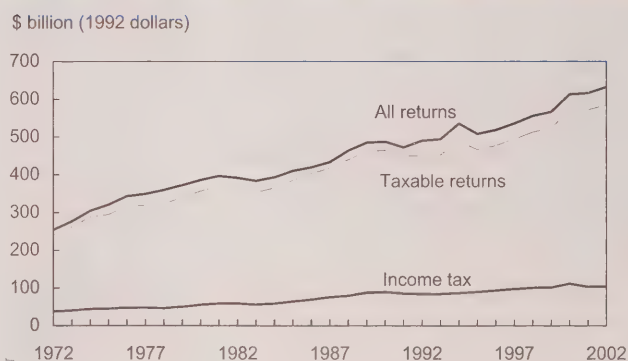


The shift in the age distribution of taxfilers resulted in the median age for men rising from 37.6 to 45.0 while women's rose from 35.0 to 45.3. The greater increase for women can be attributed to an increase in the proportion of women aged 45 to 64 filing taxable returns in 2002 (36% compared with 27% in 1972; the corresponding proportions for men were 36% and 30%).

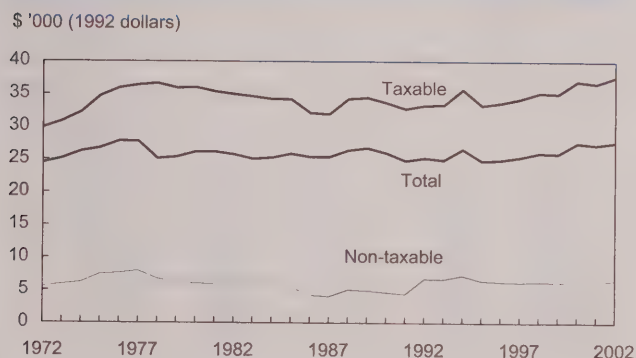
Between 1972 and 2002, total income assessed (in 1992 dollars) on all returns rose from \$254 billion to \$634 billion—an increase of 150% compared with only 41% in the overall population, or 120% in the number of returns. Of total assessed income, only 5% pertained to non-taxable returns in 1972 compared with 8% in 2002. This was the result of the rise in the number of people filing non-taxable returns. However, the incomes of such filers are very low and therefore constitute a small fraction of total assessed income in contrast to their representation among all taxfilers—20% in 1972 and 33% in 2002.

As total assessed income increased, so did income tax (from \$38 billion to \$104 billion). However, the growth in income tax paid outpaced the growth of total assessed income.

### Assessed income and taxes paid



### Average assessed income per taxable and non-taxable return



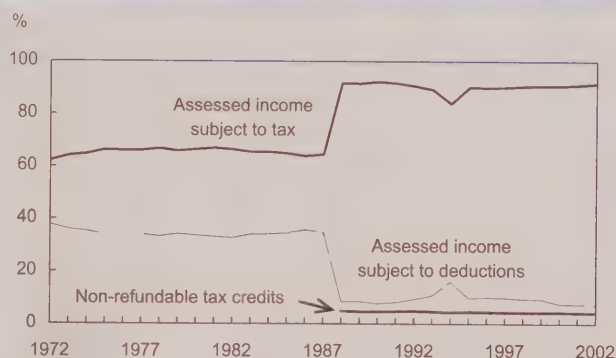
The average assessed income (in 1992 dollars) per taxable return rose from \$29,900 in 1972 to \$37,700 in 2002; for non-taxable returns, it climbed from \$5,600 to \$6,500. The widening gap in average incomes indicates a rise in income inequality.

The average assessed income per non-taxable return has been more or less constant since 1995, whereas for taxable returns it showed more fluctuation, reflecting swings in the economy and labour market as well as the demographics of taxpayers.

A portion of assessed income is not taxed because of deductions allowed by the tax system. In 1972, deductions amounted to 38% of assessed income; in 1987, 35%—leaving 62% and 65% subject to tax. In 1988, the Canadian tax system introduced the concept of non-refundable tax credits. This dropped the deduction portion and raised the taxable portion. Apart from a dip to 84% during the recession in the early 1990s, the taxable portion stood close to 92% from 1988 to 2002. In other words, the switch to non-refundable tax credits left much more of assessed income subject to tax.

Over the 1988 to 2002 period, non-refundable tax credits hovered between 4% and 5% of total assessed income.

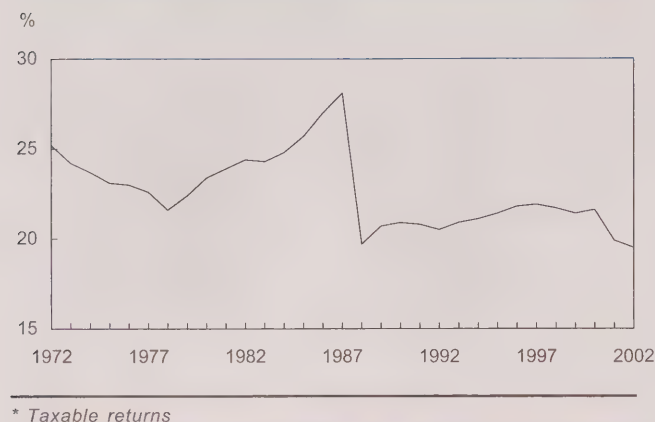
### Assessed income\* subject to deductions and tax



\* Based on taxable returns.



### Income tax paid as a proportion of taxable assessed income\*

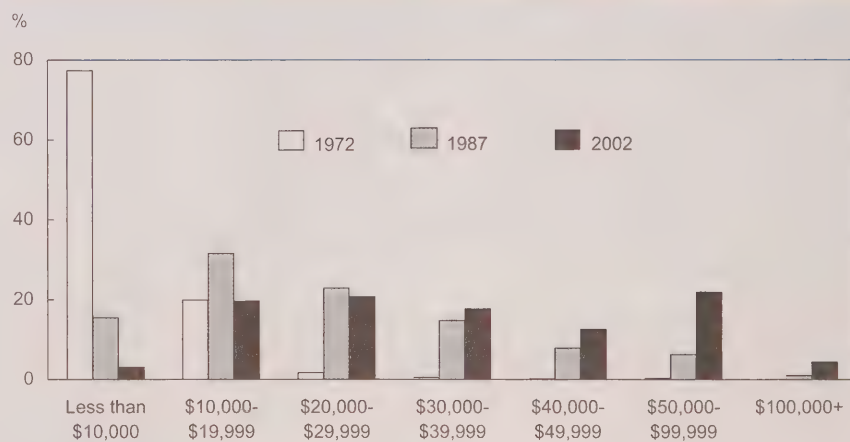


Average income tax paid (in 1992 dollars) per taxable return rose from \$4,700 to \$5,800 between 1972 and 1987 and from \$6,200 to \$6,700 between 1988 and 2002. The switch from eligible deductions to non-refundable tax credits resulted in an increase between 1987 and 1988 of 7% in average tax paid. Canadians with taxable returns paid 25% of their assessed income as tax in 1972 compared with 28% in 1987. However, with the switch in the system, the ratio of tax to taxable assessed income dropped significantly because of the relatively large denominator. From 1988 onwards, a different trend emerged as the incidence of taxation increased from 1988 to 1990, then from 1992 to 1997, and so on. After 2000, however, the incidence dropped steadily—attributable to tax deductions and other measures to reduce the tax burden, introduced by both the federal and provincial governments.

Not only did the number of taxfilers increase but their average age also climbed between 1982 and 2002. And at the same time, the size and mix of the economy and the purchasing power of the dollar changed. For instance, 65.6% of the employed were in the service sector in 1972 compared with 74.4% in 2002; over the same period, goods and services worth \$1.00 in 1972 jumped to \$4.56 in 2002.

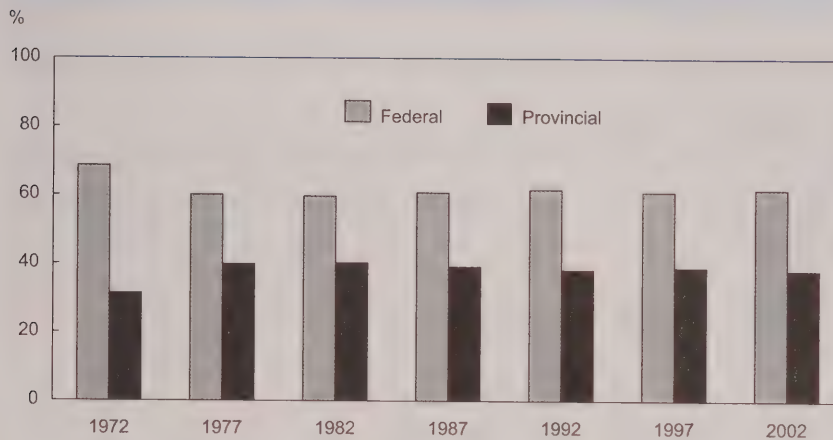
In 1972, a little over three-quarters (77.4%) of filers of taxable returns had incomes under \$10,000 (in current dollars), and only 0.3% had \$50,000 or more; by 2002, the respective proportions were 3.0% and 26.3%. The shift in income distribution is clearly evident in the declining proportion of filers at the lower end and the expanding share at the upper end. However,

### Taxable returns by total income



\$10,000 in 1972 would approximate \$50,000 by 2002, a level accounting for 73.7% of all filers of taxable returns in that year. Over the 30 years, after adjusting for inflation, the proportion of filers at the lower end of the income scale changed very little (less than 4 percentage points).

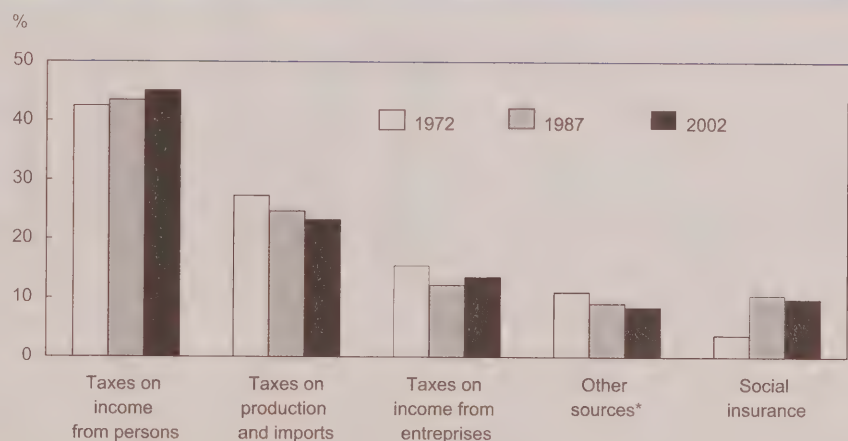
### Federal and provincial shares of income tax from persons



Both federal and provincial governments can determine marginal tax rates, impose surtaxes, and set deductions and non-refundable tax credits. These may vary from province to province. Of total income tax from persons in 1972, 69% was federal and 31% provincial; 30 years later, the respective proportions were 62% and 38%. The maximum provincial share reached 45% in 1978 and stayed between 42% and 36% from 1979 to 2002.

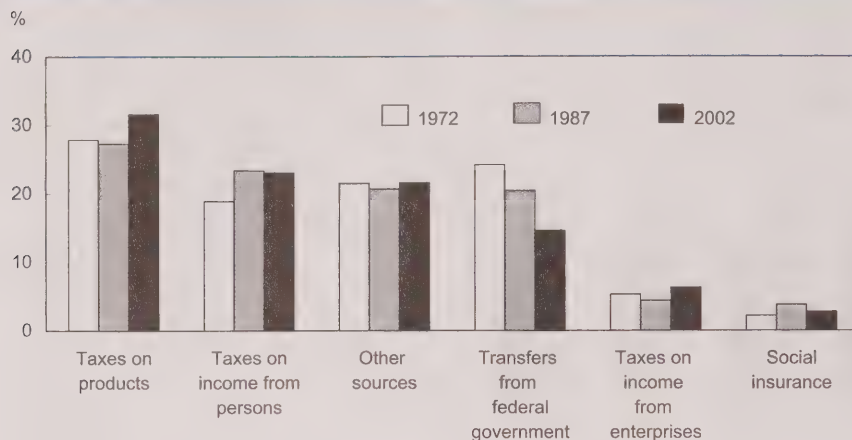
Total revenue (in current dollars) of the federal government rose from \$18.8 billion in 1972 to \$191.1 billion in 2002. Of this, personal income taxes accounted for 43% in 1972 compared with 45% in 2002. The lowest share, 36%, was hit in 1981 (during a severe recession); the highest, 49%, in 1990 (during a somewhat longer but less severe recession). Other major sources of federal revenue include taxes on production and imports (or consumption tax), and premiums for social insurance (such as Employment Insurance, CPP, and other pensions). Collectively these accounted for 74% of total federal revenue in 1972 compared with 78% in 2002.

### Sources of federal government revenue



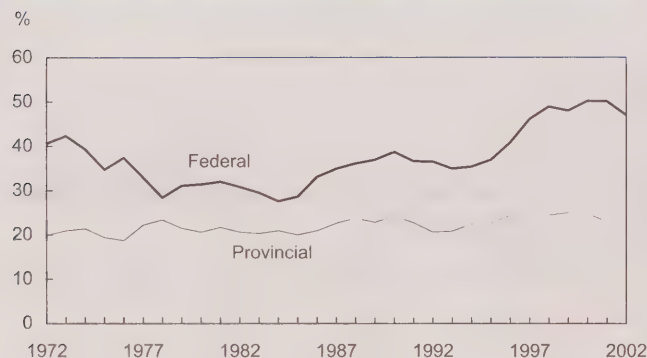
\* Includes investment income, sales, taxes from non-residents and other transfers from persons.

## Sources of provincial government revenue



Total provincial government revenues (in current dollars) jumped from \$19.3 billion in 1972 to \$229.5 billion in 2002. Besides income tax and sales taxes, transfers from the federal government are another major source of provincial revenue. Of total provincial revenue in 1972, personal income taxes constituted only 19% compared with 28% from sales taxes and another 24% from federal transfers. By 2002, the respective proportions were 23%, 32% and 15%.

## Income tax from persons as a proportion of federal and provincial government expenditures



For both levels of government, income taxes increased in line with the need to finance public services. Since income taxes are the major source of federal government revenue, the proportion of such taxes to expenditures was much larger than in the provinces. At the federal level, it moved from 41% to 47% and at the provincial level, from 20% to 23%. The proportion peaked at 50% for the federal government in 2000 compared with 25% for provincial governments in 1999.

## Federal and provincial income tax as a proportion of GDP and expenditures

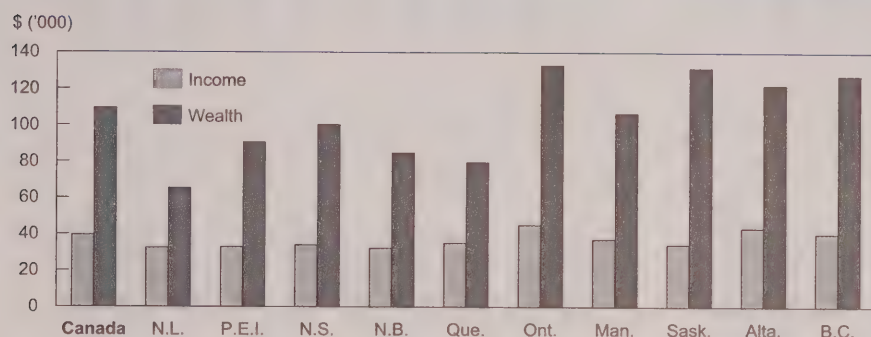


Over time, as the population increased, so did government expenditures, income taxes, and the size of the overall economy measured in terms of gross domestic product (GDP). About 30.6% of federal and provincial expenditures on goods and services were financed by income taxes in 1972 compared with 33.2% in 2002 (the proportion peaked at 36.3% in 2000—the year with the lowest unemployment rate). On the other hand, the ratio of income taxes to GDP crept up from 10.6% to 12.0%, reaching a maximum of 14.2% in 1991 (a recessionary period when GDP slumped or lagged behind the growth in income taxes).



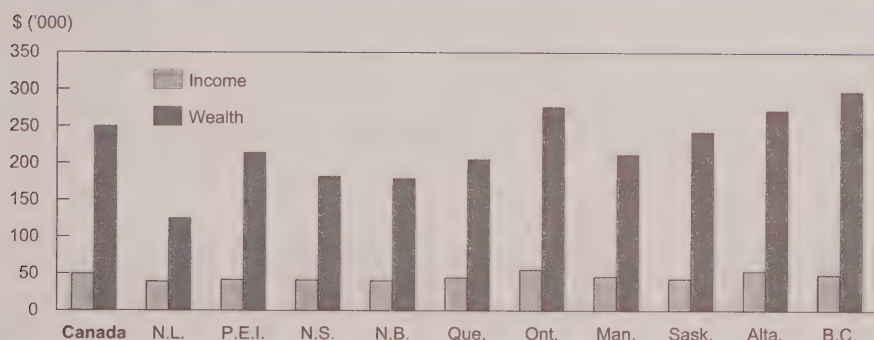
# More on wealth inequality by province

## Median income and wealth of families

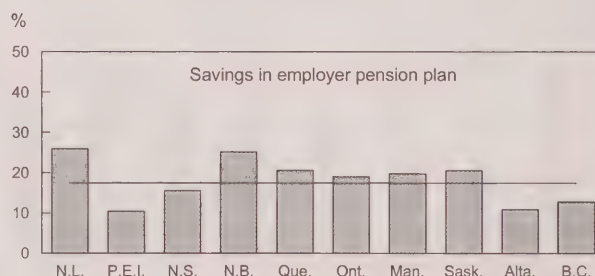
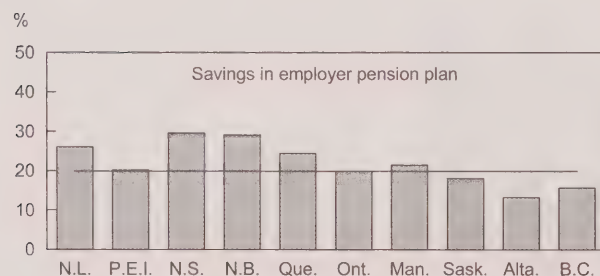
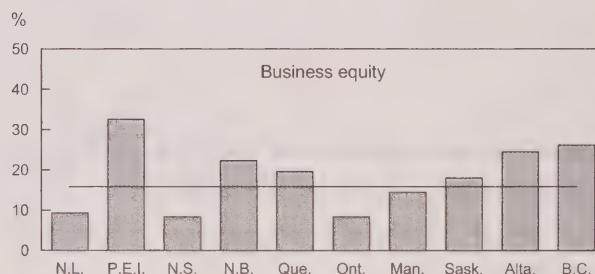
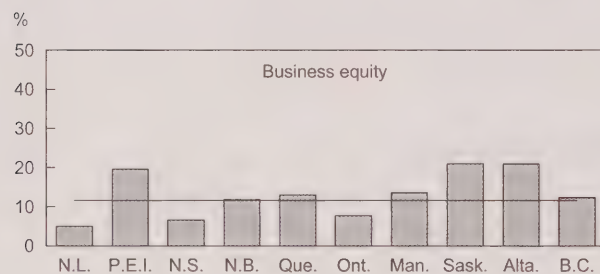
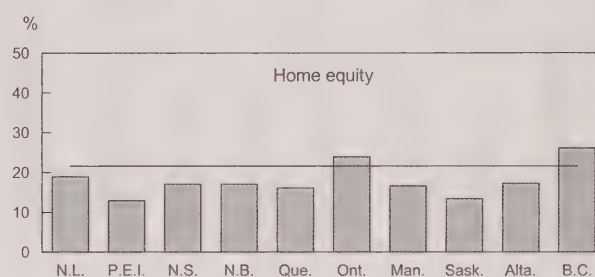
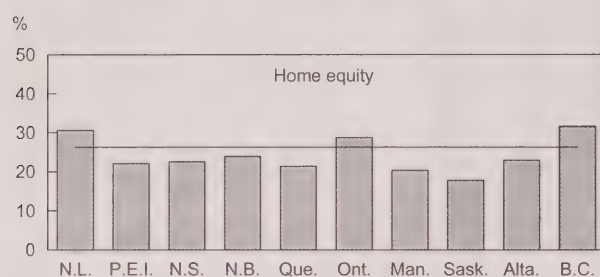
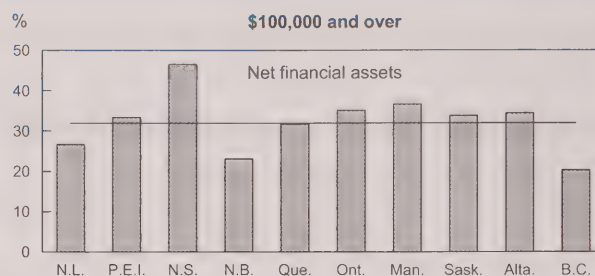
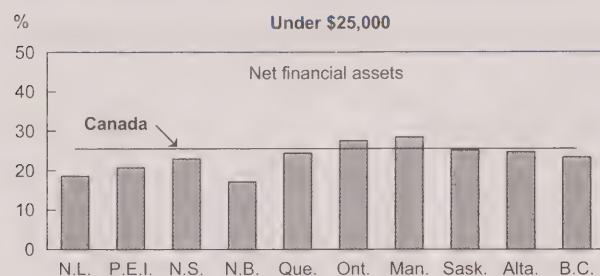


The concept of wealth used here is total assets less outstanding debt. Both marketable and non-marketable assets are included. For more details, see "Wealth inequality by province" in the September 2004 online edition (vol. 5, no. 4), and Winter 2004 print edition (vol. 16, no. 4) of *Perspectives*.

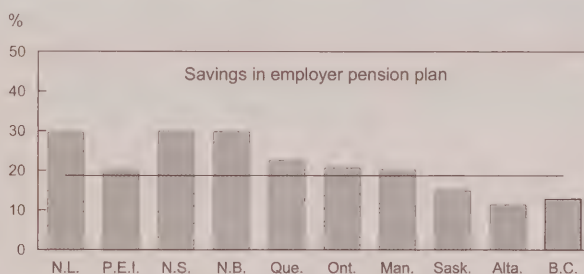
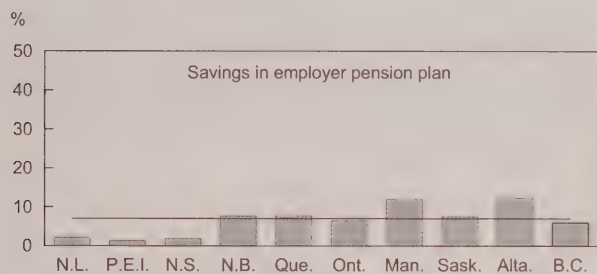
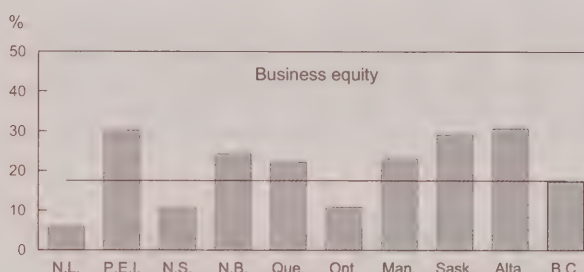
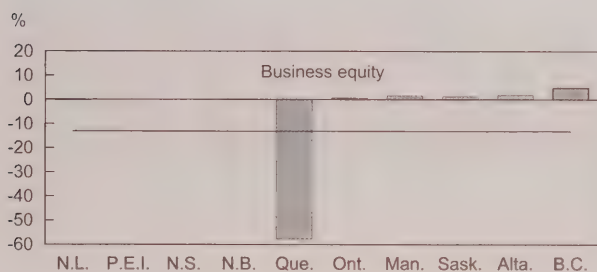
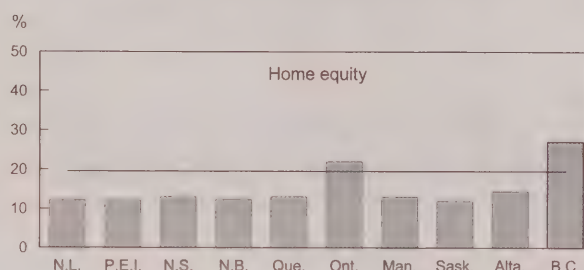
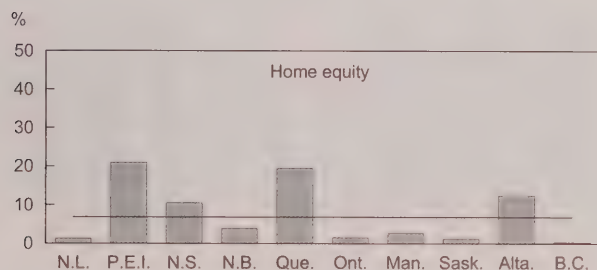
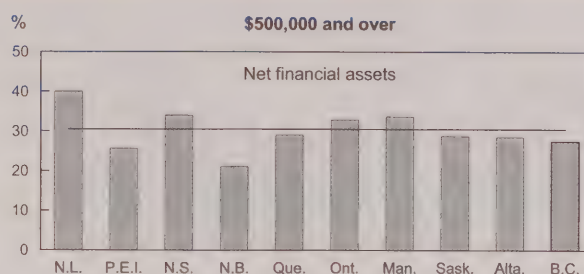
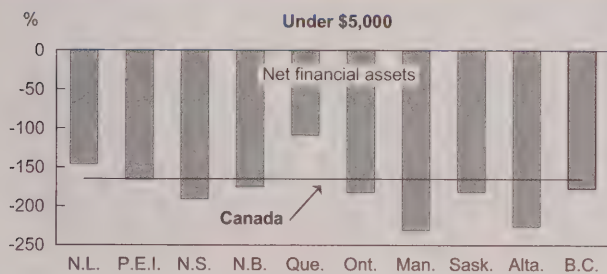
## Mean income and wealth of families



## Wealth composition of families by income group

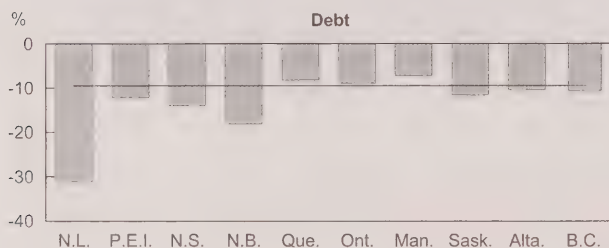
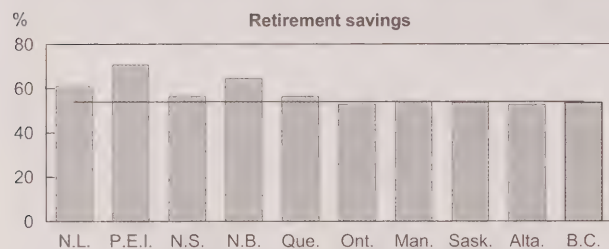
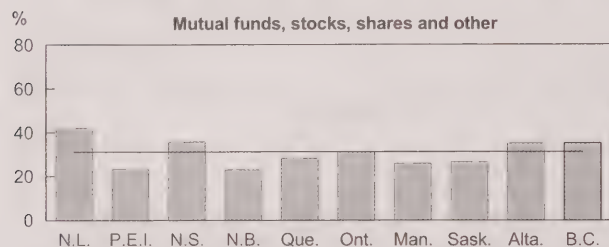
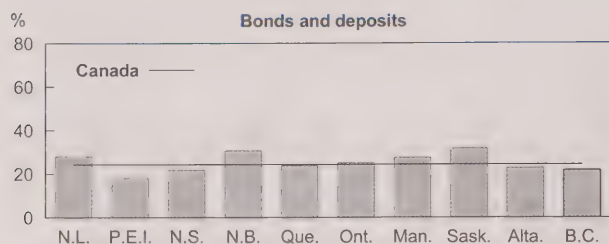


## Wealth composition of families by wealth group

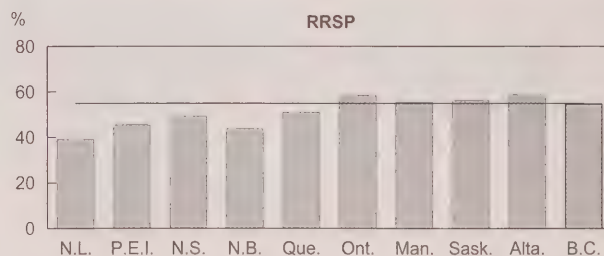
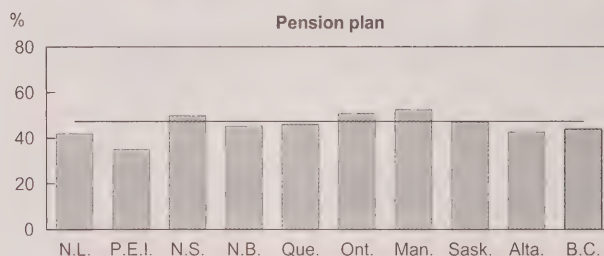
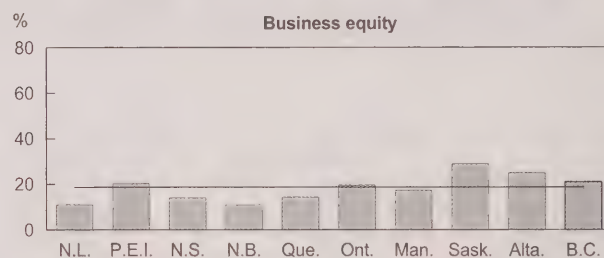
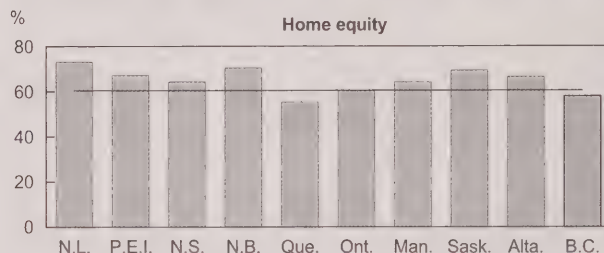
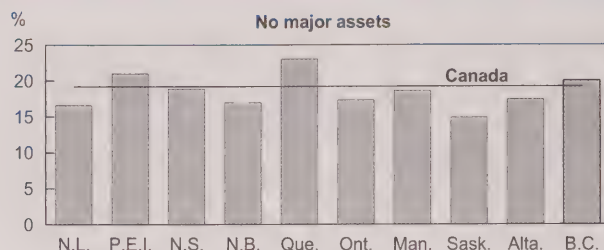




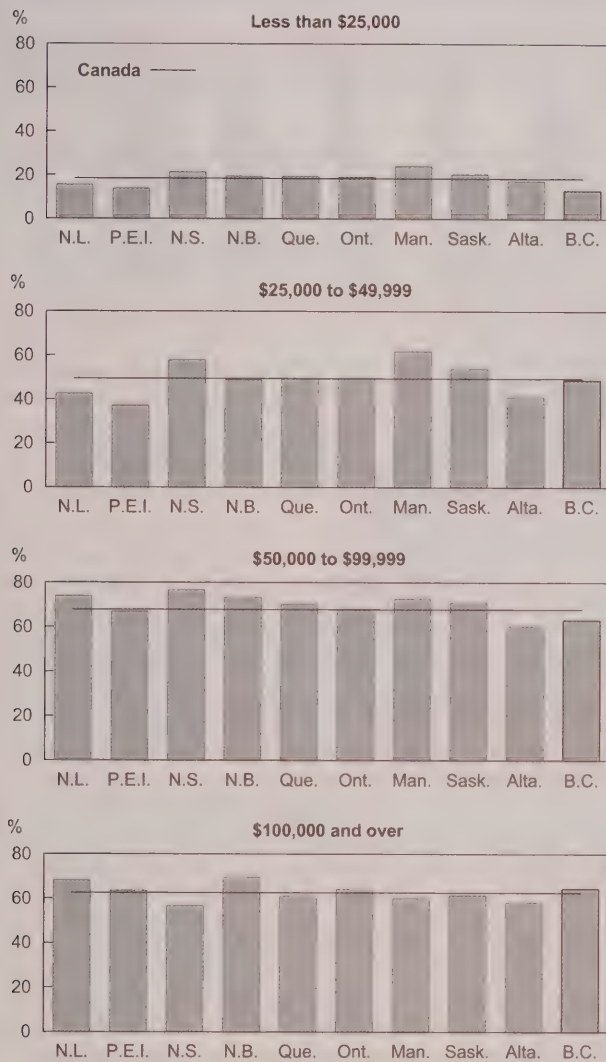
## Composition of net financial assets of families



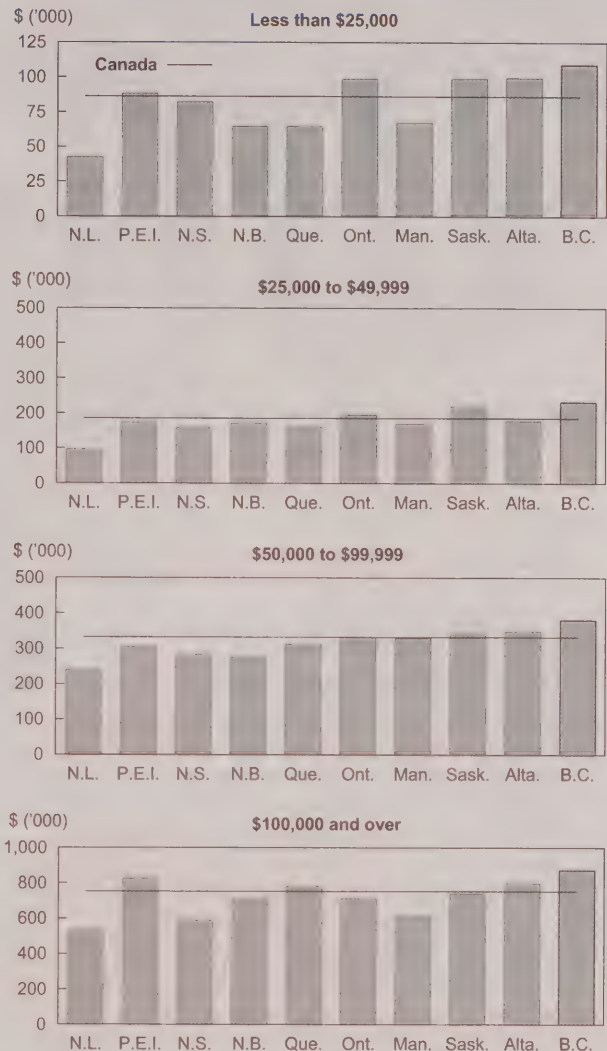
## Families holding major assets



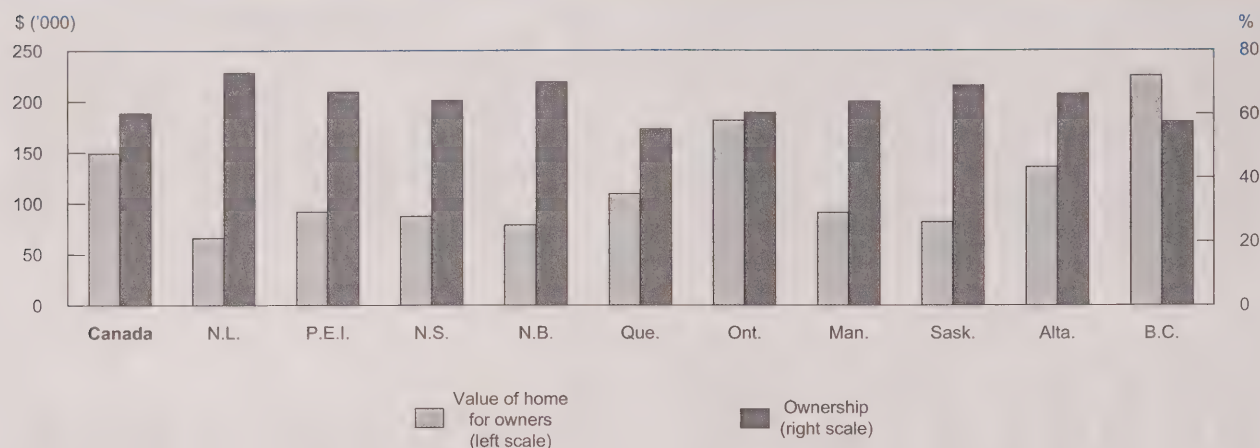
## Families covered under an employer pension plan by income group



## Mean wealth of families by income group



## Homeownership rate and value of home



### Data source and definitions

The analysis is based on the Survey of Financial Security (SFS), conducted between May and July 1999. The sample consisted of 23,000 dwellings from the 10 provinces—21,000 from a regular area sample and 2,000 from 'high-income' geographic areas. A high-income household was one with total income of at least \$200,000 or investment income of at least \$50,000. Excluded were persons living on Indian reserves, members of the Armed Forces, and those living in institutions such as prisons, hospitals, and homes for seniors. The SFS interview questionnaire (Catalogue no. 13F0026MIE-2001001) is available free on the Statistics Canada Web site at [www.statcan.ca/cgi-bin/downpub/research.cgi](http://www.statcan.ca/cgi-bin/downpub/research.cgi). For more details about the survey, see *The assets and debts of Canadians: An overview of the results of the Survey of Financial Security* (Statistics Canada Catalogue no. 13-595-XIE).

The survey collected information on the socio-demographic and labour force characteristics of persons aged 15 years and over, as well as the assets and debts of their families at the time of the survey. For 85% of survey respondents, income for 1998 was compiled from authorized linkage to tax records; income information for the remaining 15% was collected in person. Collection was by personal interview, although respondents could also complete the questionnaire themselves. Financial data were sought from the family member most knowledgeable about the family's finances. Proxy response was accepted. The overall response rate was 76%.

With the exception of savings in employer pension plans, missing data on components of assets and debts used to compile wealth estimates were imputed mostly by a hot

deck procedure. Accrued savings in pension plans, on the other hand, were estimated through a termination valuation approach from information collected on years in the labour force, coverage under pension plan(s), contributions made, and benefits received. A detailed description of the methodology used to estimate such savings can be found in *Survey of Financial Security: Methodology for estimating the value of employer pension plan benefits* (Statistics Canada catalogue no. 13F0026MIE-2001003). Empirical data included in this paper are based on a sample of 15,933 families, including 1,143 from the high-income sample.

**Family:** Refers to economic families and unattached individuals. An economic family is a group of persons sharing a common dwelling and related by blood, marriage (including common law) or adoption. An unattached individual is a person living alone or with unrelated persons.

**Pre-tax family income:** Sum of incomes of family members aged 15 or over received from all sources during the calendar year 1998. Sources include wages and salaries, net income from self-employment, investment income, government transfers, retirement pension income, and alimony. Excluded are income in kind, tax refunds, and inheritances.

**Wealth:** Excludes future claims on publicly funded, income security programs, as well as potential returns on human capital (employment income or ability to generate investment income).



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**SUMMER 2005**

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# PERSPECTIVES

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### 7 Spenders and savers

*Raj K. Chawla and Ted Wannell*

The national savings rate has been oscillating around historic lows for several years, prompting concerns about the resilience of a macro-level economy increasingly reliant on debt-financed consumer spending. Many are also troubled by the balance sheets of households, where ever-expanding debt has rapidly outpaced earnings growth. The resulting record-high, debt-to-income ratios leave households more vulnerable to interruptions in income. This article examines changes in saving and spending patterns over 20 years, and differences in the characteristics and spending patterns of saving versus spending households.

### 17 Property taxes relative to income

*Boris Palameta and Ian Macredie*

Local government revenues are increasingly perceived as inadequate to fund the program responsibilities of municipalities. Property taxes (residential and non-residential) are by far the most important revenue source, accounting for 35% in 2003 (up from 30% in 1988). But, residential property taxes are commonly viewed as regressive in relation to income. This study uses the 2001 Census of Population to quantify the regressiveness of residential property taxes in Canadian municipalities, and to examine whether regressive taxes are generally attributable to lower-income seniors living in high-priced homes.

### 29 Diverging trends in unionization

*René Morissette, Grant Schellenberg and Anick Johnson*

Since the 1980s, the proportion of Canadian workers belonging to labour unions has declined considerably. Some workers have been more affected than others—particularly men, younger workers, and those in goods-producing industries. The article focuses on the extent to which the trends reflect changes in the distribution of employment by occupation, industry, or other characteristics.

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## 37 Escaping low earnings

*René Morissette and Xuelin Zhang*

Prolonged periods of low earnings can limit an individual's capacity to cope with income losses or unexpected expenses, and makes economic self-sufficiency difficult. The ability to escape low earnings is linked to a number of factors, including age, firm size, and changing jobs.

## 45 Business support services

*Ernest B. Akyeampong*

Call centres are believed to be largely responsible for the phenomenal growth of the business support services industry over the past two decades. The Labour Force Survey is used to profile call-centre workers and to substantiate or disprove some commonly held perceptions.

## 50 Looking, and looking, for work

*Vincent Dubé and Claude Dionne*

This article investigates factors influencing the chances of find a job for people who were unemployed for more than six months in the late 1990s and early 2000s. Results for the short-term jobless are included for comparison.

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## Perspectives on Labour and Income

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# Highlights

## *In this issue*

### ■ **Spenders and savers** ... p. 7

- Canadians are spending more and saving less than they did in the past. Much of the spending is financed by borrowing, either through mortgages or consumer debt. From 1982 to 2001, the debt-to-income ratio rose from 55% to 97%. On a constant-dollar basis, per-capita debt doubled from \$10,300 to \$20,900.
- As aggregate debt soared, the number of households out-spending their income in the course of a year also increased. In 1982, 39% of households spent more than their pre-tax income. By 2001, the proportion had reached 47%.
- Savers (those who spend less than their pre-tax income) earned substantially more than spenders and consequently paid more income tax. Personal income taxes amounted to 25% of expenditure for savers in 2001 versus 16% for spenders.
- After netting out taxes and security payments, spenders consumed more than savers, despite their lower earnings. Spenders out-consumed savers by 15% in 1982 and 10% in 2001. The narrowing consumption gap reflects slower income growth among spending households.
- Even though the proportion of savers consistently rose with income in both 1982 and 2001, the proportion of spenders increased in all income classes between the two years.
- The proportion of spenders increased in all age groups, but particularly among households in the pre-retirement years. Significant increases were also noted among households with education spending, families with children at home, and homeowners with mortgages.

- Spenders out-purchased savers in most categories of goods and services, but car purchases were mostly responsible for pushing spenders into the red. In 2001, for example, spenders put out an average of \$15,200 for cars compared with \$9,000 for savers.

### ■ **Property taxes relative to income** ... p. 17

- In 342 municipalities examined, homeowners in the lowest income quartile spent a greater proportion of their income on property taxes—sometimes as much as four or five times greater—than those in the highest quartile.
- The regressiveness of property taxes has nothing to do with tax levels set by local governments. It arises because income inequality generally exceeds property value inequality. Municipalities with high income inequality and relatively low property value inequality—mainly municipalities in large, urban areas—generally have more regressive property taxes.
- Neither can regressiveness be attributed simply to seniors with low incomes living in relatively expensive houses. In most municipalities, lower-income non-seniors spent an equal or greater proportion of their income on property taxes compared with their senior counterparts.

### ■ **Diverging trends in unionization** ... p. 29

- The proportion of unionized employees fell from 38% to 31% between 1981 and 2004. The decline, most of which took place between 1989 and 1998, was entirely due to trends in the commercial sector.

- Overall, union coverage for men fell from 42% to 30% while coverage for women remained steady at 31%.
- While the unionization rate of men aged 25 to 34 fell dramatically (from 43% in 1981 to 24% in 2004), the rate for women aged 45 to 64 rose 8 percentage points (from 32% to 40%).
- Roughly one-third of the decline in young men's union coverage is due to their growing concentration in industries that typically have low unionization rates. Roughly 40% of the increase in union coverage for women 45 to 64 is associated with their growing tendency to be employed in high-coverage industries such as public services.
- The drop in union coverage among young men has had important implications for their wages. Between 1981 and 1998, men aged 25 to 34 saw their average hourly wages drop 10%. About one-fifth of the decline was due to their reduced union coverage.

### ■ Escaping low earnings ... p. 37

- With the exception of women aged 25 to 29, employees did not see their chances of escaping low earnings increase between the 1980s and the 1990s, despite rising educational attainment.
- Between a third and a half of male workers with low earnings in a given year had escaped this situation four years later. For women, the proportion varied between 15% and 35%.
- Men and women who remained employed with a large firm (500 or more employees) were almost twice as likely to escape low earnings as those who stayed with a small one (less than 20 employees).
- Among workers who changed employers, those moving to a larger firm were much more likely to move out of low earnings than those moving to a smaller firm.
- While a substantial proportion of workers escaped low earnings over the space of a four-year period, about one-quarter fell back during the next four years.

### Business support services ... p. 45

- Employment in business support services (telephone call centres being a major component) increased more than fivefold (447%), from 20,000 to 112,000 between 1987 and 2004. In comparison, growth in service-sector employment was 37%, and overall employment 29%.
- Areas with persistently high unemployment, such as Atlantic Canada, have benefited most from the technology-driven, fast employment growth in business support services. In 2004, Atlantic Canada's share reached 25%. Close to half of the industry's employment was in Ontario, and only 9% in Quebec.
- Women and youth are relatively over-represented in business support services. And unionization is very low. Not surprisingly, wages are also generally low (about \$12.45 per hour in 2004 compared with the service-sector average of \$18.10), and labour turnover is relatively high.

### ■ Looking, and looking, for work ... p. 50

- Among the long-term unemployed (more than six months) during the late 1990s and early 2000s, chances of finding a job were less for those who were social assistance beneficiaries (47% less chance), aged 56 or older (-39%), or immigrants (-21%).
- On the other hand, during the same period, chances of finding a job were greater for long-term unemployed who were aged 16 to 25 (35% more), living in the Prairies (+35%), receiving Employment Insurance benefits (+21%), or primary household maintainers (+16 %).
- Except for being an immigrant, the factors for long-term unemployment were also observed for short-term unemployment. In addition, chances for the short-term unemployed were influenced by education level; having at least two years' labour market experience; being a woman, visible minority, or Aboriginal person; and having a disability.

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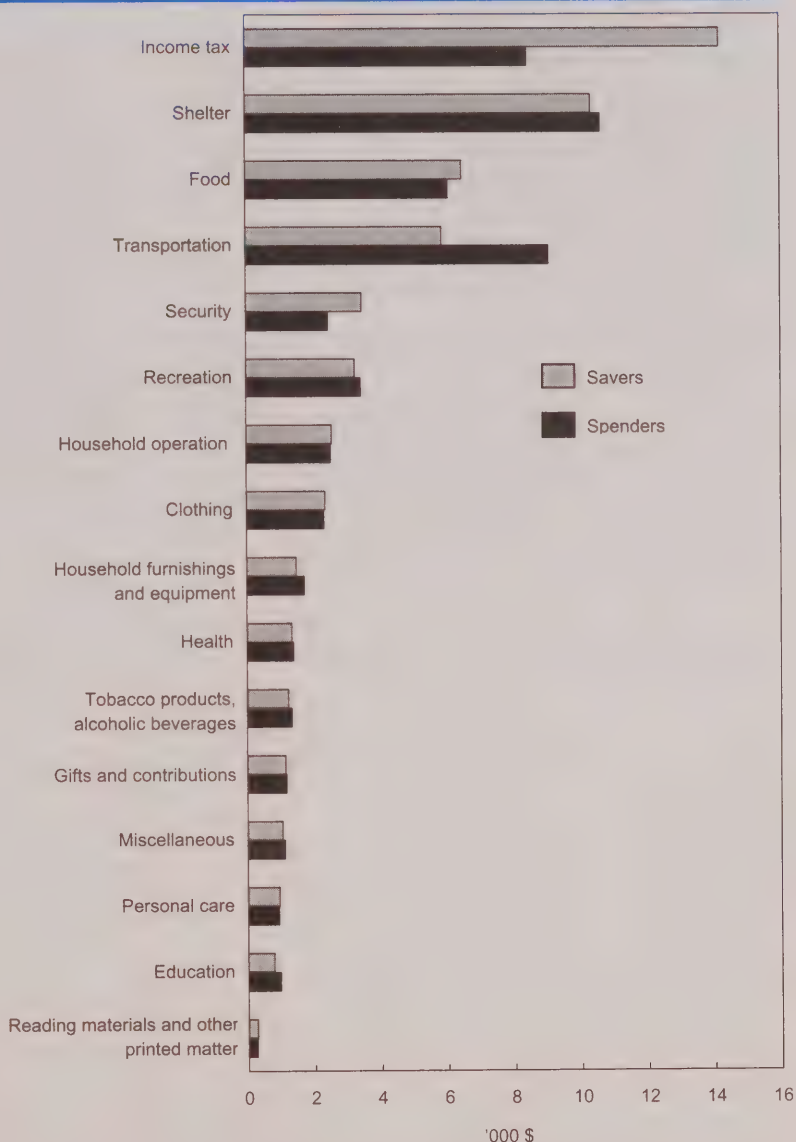
# Spenders and savers

Raj K. Chawla and Ted Wannell

**T**he national savings rate has been oscillating around historic lows for several years. This ebb tide in savings has prompted concerns about the resilience of the macro-level economy since growth is increasingly tied to debt-financed consumer spending. Many are also troubled by the balance sheets of households, where ever-expanding debt has rapidly outpaced earnings growth. The resulting record-high, debt-to-income ratios leave households more vulnerable to income interruptions.

While macro-level indicators can give the impression of a single economic ship riding the waves of cyclical activity, it is also important to recognize the variability behind the averages. Many households do save, but increasing numbers are slipping into the red and spending more than they earn in a year. This article focuses on the distinction between savers and spenders (see *Data sources and definitions*). It examines how patterns of saving and spending changed between 1982 and 2001, then looks at differences in the characteristics and spending patterns of saving versus spending households (Chart). The main objectives are to highlight both

**Savers pay more income tax, spend less on transportation.**



Source: Survey of Household Spending, 2001

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macro and micro factors that have contributed to the declining savings rate, and to provide some evidence on the financial vulnerability of spending households.

### A cautionary tale of two time periods

Long-run changes in spending patterns are evident in the span of a generation (20 to 25 years)—sufficient time to observe changes in demography, the labour force and technology. The period from the early 1980s to the early 2000s witnessed the continuation of long-

term demographic changes that contribute to an aging of the population: a declining birth rate and increasing life expectancy. The labour force participation of women also continued to rise. And new computer, communications and consumer products progressed from curiosities to commodities in a short span of years (see *New technologies, changing tastes*). All of these factors contributed to immutable changes in spending patterns (see also Harchaoui and Tarkhani, 2004).

### New technologies, changing tastes

In addition to the macro-economic factors that seem to be spurring spending, the array of new products and services may also be loosening purse strings. Technologies that were rare or non-existent in 1982—home computers, cellular phones, VCRs, CDs, DVDs, the Internet, game consoles, digital cameras—are now commonplace. Many of these electronic devices follow development paths where features and quality increase rapidly relative to prices, leading to short product life spans. This generates incentive to upgrade frequently.

Spenders and savers do not differ greatly in their ownership of these technological devices. Rather, both reflect the rapid growth in such technologies over the course of a generation. Desktop computers, at the heart of the technological revolution, were in the realm of hobbyists in 1982 but could be found in the majority of homes in 2001. Similarly, connecting these computers to the Internet has progressed from a rarity (not even measured in 1982) to just about half of all households in 2001. Cell phones were owned by almost as many 2001 households.

As of 2001, some newer technologies have begun elbowing their way into categories that were saturated by an earlier wave of technology. For example, DVDs are rapidly supplanting video cassettes. Just less than one in five households owned a DVD player in 2001, jumping to more than half in 2003. Although not on the same rapid trajectory as DVDs, satellite dishes could be found in 18% of households in 2001, providing significant competition to cable TV services.

In addition to these new toys, the taste for comfort and convenience in the home has also increased markedly in the past 20 years. Household ownership of microwave ovens increased sevenfold and central air conditioning fivefold, while twice as many kitchens had dishwashers. Even the stalwart washers and dryers experienced appreciable growth in this period.

### Ownership of household technologies and equipment\*

	All households		Spenders		Savers	
	1982	2001	1982	2001	1982	2001
	%					
Home computer	2.5	59.7	2.1	59.1	2.7	60.2
Internet	..	49.3	..	48.4	..	50.2
Video equipment	10.0	91.5	10.0	91.3	10.0	91.7
Cable TV	50.9	68.3	50.4	66.1	51.3	70.2
Satellite dish	..	18.2	..	18.0	..	18.4
DVD player	..	19.6	..	19.1	..	20.0
CD player	..	70.7	..	70.3	..	71.1
Cell phone	..	47.5	..	47.8	..	47.2
Central air conditioning	4.8	23.0	3.8	20.4	5.4	25.1
Dishwasher	23.5	51.8	22.4	48.6	24.2	54.5
Microwave oven	12.0	91.3	11.0	90.5	12.6	92.0
Clothes dryer	61.9	75.2	58.9	71.9	63.7	78.0
Washing machine	75.0	80.5	70.4	77.0	77.9	83.6

Sources: Family Expenditure Survey, 1982; Survey of Household Spending, 2001

\* As of the end of December of reference year



On the other hand, some changes in spending may be related to cyclical swings in the economy caused by factors such as job loss and interest rate fluctuations. The early 1980s were punctuated by a short, but steep recession in 1981-82, while the early 2000s witnessed the continuation of a long economic expansion with only a slight pause in 2001. Unemployment, 11.0% in 1982 compared with 7.2% in 2001, may affect household spending adversely, but the effect is dampened by a number of factors. Some spending is 'locked in'—for example, mortgage payments, other loans, utilities, and food consumed in the home. Employment Insurance (EI) benefits can soften the drop in income. Also savings or credit may be used to smooth consumption over short periods of unemployment.

The markets for credit and savings were very different in the two time periods. In the early 1980s, inflation, nominal interest rates, and real interest rates were all very high, while just the opposite was true in the early 2000s.<sup>1</sup> To some extent, this sea change seems to

represent a longer-run (or secular) change in environment, rather than a cyclical fluctuation. The change in environment seems to have raised the *level* of spending relative to earnings but its effect on the *disposition* of spending and consumption smoothing is less clear. Suffice it to say that enough changes occurred in the course of 20 years—whole new classes of products, changes in relative prices, income taxes and security systems, to name a few—that the article adopts a mainly empirical approach to expenditure changes, with some reference to demographic life cycles to frame the analysis.

Finally, the exact points for comparison are dependent upon available survey data. In the early 1980s, expenditure surveys were conducted every four years (1982, 1986). The current household spending survey has been conducted annually since 1997, with the 2001 data being the latest available at the beginning of this study. Thus, to meet the criterion of a generational span, 1982 and 2001 were chosen.

**Table 1: The proportion of spenders among households**

	Age of reference person							
	1982				2001			
	Total	<45	45-64	65+	Total	<45	45-64	65+
	%							
<b>All households</b>	<b>38.7</b>	<b>43.5</b>	<b>33.9</b>	<b>32.8</b>	<b>46.5</b>	<b>49.9</b>	<b>45.1</b>	<b>42.0</b>
<b>Tenure</b>								
Renter	47.6	51.9	42.3	36.6	54.4	57.3	56.7	42.5
Homeowner with mortgage	34.6	35.6	32.3	36.2	46.1	45.0	46.1	61.2
Homeowner without mortgage	31.2	35.6	29.9	30.2	37.9	37.9	36.4	39.7
<b>Type of household</b>								
Unattached individuals	44.4	53.6	41.1	35.5	51.5	57.6	53.7	44.0
Married couples only	33.3	38.5	29.0	31.5	42.2	44.6	42.3	40.0
Couples with unmarried children only	36.8	39.5	31.7	27.8	43.3	46.1	39.0	42.5
Couples with other relatives/persons	36.7	39.8	35.7	26.3	43.1	44.2	41.9	44.3
Lone-parent families	51.0	61.7	41.8	29.6	55.4	60.1	54.5	36.8
Other, with related persons	35.9	44.0	30.4	31.2	45.6	48.9	44.3	41.4
Other, with unrelated persons	46.9	45.1	64.5	36.5	49.8	52.0	48.1	38.0
<b>Household income*</b>								
Under \$20,000	56.6	75.5	61.1	42.6	65.7	79.3	74.8	47.6
\$20,000 to \$34,999	48.1	59.4	45.4	31.5	55.1	65.7	58.9	41.4
\$35,000 to \$49,999	40.2	46.2	34.3	22.4	50.2	51.1	52.9	41.8
\$50,000 to \$74,999	32.5	36.6	27.1	13.7	42.7	45.3	41.0	36.2
\$75,000 to \$99,999	24.1	25.3	24.4	5.1	34.0	36.0	33.0	23.3
\$100,000 and over	16.2	19.1	14.9	0.5	22.9	22.5	23.1	24.2
<b>Education expenditure</b>								
No	37.4	43.5	33.6	32.9	45.1	48.7	44.8	41.9
Yes	40.4	43.5	34.3	31.7	48.4	50.7	45.6	43.1

Sources: Family Expenditure Survey, 1982; Survey of Household Spending, 2001

\* In 2001 dollars.

## Savings rate down

The official System of National Accounts (SNA) savings rate is simply the difference between the amount households take in as income and their expenditures on taxes and personal consumption. For each dollar of personal income received in 1982, Canadians paid 20 cents on taxes and deductions, spent 63 cents on personal consumption, and saved the remaining 17 cents. By 2001, taxes and deductions took 25 cents and personal consumption 71 cents, leaving just 3 cents in savings. As noted, annual figures may be affected by cyclical factors, but the broad trends are clear: Canadians are now spending more on taxes and personal consumption than a generation ago and, as a result, are saving less of their income.

A drop in savings potential implies more reliance on current income and borrowed funds for the purchase of both consumption and investment items. The largest investment for most families is their home. While the proportion of households owning a home edged up from 61% to 64% over the period, the SNA shows that household mortgage debt ballooned from \$174.1 billion to \$447.2 billion (in 2001 dollars).<sup>2</sup> Similarly, SNA estimates of outstanding consumer loans (the amount owed on all credit cards, other personal loans, unpaid bills, and so forth) mushroomed from \$84.1 billion to \$203.8 billion. As a result, the total debt owed by households rose sharply from \$258.2 billion in 1982 to \$651.0 billion in 2001—an increase of 152% compared with an increase of just 42% in disposable income. Thus the debt-to-income ratio rose from 55% to 97%. On a per-capita basis, debt doubled from \$10,300 to \$20,900.

## Both the proportion of spenders and the spending gap rose

As the savings rate fell, the number of households outspending their income in the course of a year increased. Of the 8.4 million households in 1982, 39% spent more than their pre-tax income (Table 1). By 2001, the number of households had risen to 11.7 million with 47% being spenders.

Overall, the total expenditures of saving versus spending households are remarkably similar. Spenders actually spent slightly more than savers in 1982, even though they brought in 28% less income. In 2001, saving households spent about \$3,000 more than

spending households as the income gap expanded to 35%. So it is mainly income that separates savers from spenders.

Since savers have higher average incomes than spenders, one would expect the proportion of savers to rise with income, as is indeed the case. However, between 1982 and 2001, the proportion of spenders rose across the entire income spectrum.

In 1982, 57% of all households with incomes under \$20,000 were spenders compared with 16% of those with incomes of \$100,000 and over. By 2001, the proportions had risen to 66% and 23% respectively.

Among spenders, the gap between spending and income grew across the income distribution. At the high end of the scale, spenders with incomes of \$100,000 or more spent 11% more than their income in 1982 compared with 15% in 2001. The corresponding excess of expenditure over income was more extreme for those with incomes under \$20,000—ramping up from 34% in 1982 to 54% in 2001.

## Spending up in pre-retirement years

A life-cycle approach provides a useful framework for household spending. This approach divides the life of a household into three phases:

1. **Borrowing:** Newly formed households finance investment in themselves (education, training) in expectation of rising income.
2. **Accumulation:** In anticipation of retirement, households save from surplus income.
3. **Retirement or dis-saving:** Households draw down their savings to finance consumption in later years.

To approximate these three phases, households are classified according to the age of the reference person: under 45, 45 to 64, and 65 or older.

In 1982, the proportion of spenders peaked at 44% in households with a reference person under 45, fell to 34% among those with a reference person aged 45 to 64, and remained at 33% for senior households. There is no apparent upswing in dis-saving after age 65 since public and private pension benefits appear as income for individual households but essentially represent macro-level dis-saving.<sup>3</sup> Furthermore, irregular spending on big-ticket items such as cars will push a certain percentage of accumulators into the red each year. Taking these factors into account, the standard life-cycle model provides a reasonable interpretation of the 1982 data.



## Data sources and definitions

The analysis is based on the 1982 **Family Expenditure Survey** (FAMEX), conducted in February-March 1983, and the 2001 **Survey of Household Spending** (SHS) of January-March 2002. Since the surveys were taken nearly 20 years apart, some changes in spending patterns could be attributed to changes in survey concepts, content and methods. Both surveys were conducted by personal interview, and used a multi-stage stratified clustered sample drawn from the Labour Force Survey frame that excludes population in institutions such as nursing homes, hospitals and penitentiaries and those living in the territories or on Indian reserves. However, some key differences remain. First, FAMEX, a periodic survey until 1996, asked 641 questions compared with 425 in the SHS, an annual survey since 1997. Second, the methods used to derive the final weighting factors for the population estimates were different, and much more automated systems were used by the SHS. For more details on these issues, see Statistics Canada (1984, 2000 and 2003).

The surveys collected expenditures and income from all private households in the 10 provinces. The household spending unit is defined as a group of persons dependent on a common or pooled income for major expenses and living in the same dwelling, or one financially independent individual living alone. Since the composition of a household may vary over a year, the use of part-year and full-year households would have distorted some of the comparisons. Hence, the analysis is restricted to full-year households and their composition and dwelling characteristics as of December 31 linked to details on expenditures incurred and income received during the calendar years 1982 and 2001. The usable samples were 10,938 households for 1982 and 15,899 households for 2001.

**Household:** A person or group of persons occupying one dwelling unit. The number of households, therefore, equals the number of occupied dwellings. A full-year household has at least one full-year member; a part-year household is composed entirely of part-year members.

**Head/reference person:** Despite some differences, the two concepts are used here synonymously. The 1982 data are classified by age of the head of household and the 2001 data by age of the reference person. The husband was treated as the head in families consisting of married couples with or without children, as was the parent in lone-parent families and normally the eldest in all other families. On the other hand, the reference person was chosen by the household member being interviewed as the person mainly responsible for the financial maintenance of the household. Also, this person must have been a member of the household on December 31 of the reference year. The head/reference person can be either male or female.

**Tenure:** Households are classified by tenure (homeownership status) into three groups: renters, homeowners without a mortgage, and homeowners with a mortgage.

**Expenditure on shelter:** Data on this component are not comparable. In 1982, they included mortgage interest on a home or vacation home whereas the principal was included under 'net changes in assets and debts.' In 2001, this component included information on regular mortgage payments (principal and interest).

**Pre-tax household income:** Sum of incomes before taxes and other deductions received during the reference calendar year by all members of the household. Sources include wages and salaries, net income from self-employment, rental and investment income, government transfers (EI benefits, Child Tax Benefits, GST credits, provincial tax credits, social assistance, Old Age Security, Guaranteed Income Supplement, C/QPP benefits), private and employer pension plans, scholarships, alimony, child support payments, and so forth. Income in kind, windfall gains, and capital gains/losses are excluded.

**Disposable income:** Pre-tax income less federal and provincial income tax less premiums/contributions paid on components pertaining to security (such as EI, life insurance, C/QPP, and other government and non-government work-related pension plans). Contributions to registered retirement savings plans are not treated as a component of security.

**Expenditures collected:** With some minor exceptions, the survey includes spending on all goods and services received during the reference calendar year. All expenses attributable to an owned business are excluded. On the other hand, taxes such as the GST, provincial sales tax, duties, customs and excise on all goods and services purchased are included in expenditures.

**Total expenditure:** Sum of expenditure on current consumption of goods and services, federal and provincial income tax paid, payments pertaining to security, and gifts and contributions made.

**Current consumption** (also referred to as **total consumer spending**): Includes expenditure on broad components: food, shelter, household operation, household furnishings and equipment, clothing, transportation, health, personal care, recreation, reading material and other printed matter, education, tobacco products and alcoholic beverages, and miscellaneous (including union dues and games of chance). For a detailed breakdown of the components, see Statistics Canada (2003).

**Spender/saver:** For analytic purposes, households are classified into two groups: those whose total expenditure exceeds income as spenders, and those whose expenditure equals or is less than income as savers. This classification by no means implies that the former group was more extravagant or spent more frivolously than the latter, or had no savings or wealth. This statistical divide, based on total income and expenditures during the reference years, is made simply to look at the two groups by life cycle, compare their spending patterns, and highlight any changes over time.

**Data in constant dollars:** To remove the effect of inflation or rising prices over time on consumption, all expenditures and incomes are in 2001 dollars. While the prices of all 1982 goods and services may not have moved up at the same pace as the all-items CPI, the use of one conversion factor simplifies the analysis.

**Average expenditure by item:** Two averages are used; the overall and for reporters only. Tables 2 and 3 use the overall averages.



In 2001, the life-cycle pattern flattened considerably as the proportion of spenders rose in all age groups—the biggest increase occurring in the accumulation phase of the life cycle, where the proportion jumped from 34% in 1982 to 45%. The propensity to outspend income increased to 42% for senior households and to 50% for younger households. So the change in the interest rate and credit environment seems to have increased spending across the life cycle, but particularly among households approaching or already in retirement.

Household composition is another element of the life cycle that contributes to the saving–spending balance. In both 1982 and 2001, about half of all unattached individuals and lone-parent families were spenders. However, the proportion of married couples joining the spending group increased significantly over time.

Investment in education must also be considered. Fees for postsecondary education increased markedly through the 1990s, raising the possibility that increased debt might be necessary to fund studies. Indeed, among households incurring expenditures on educa-

tion of children or other members, the proportion outspending their income increased from 40% in 1982 to 48% in 2001.

Finally, homeownership also follows a life-cycle pattern, with renting more prevalent among the young, followed by homeownership with a mortgage and then mortgage freedom. In both periods, the proportion of spenders dropped across this progression, but again it also increased over time for each group. The greatest increase in spenders occurred among homeowners with a mortgage, jumping from 35% to 46%.

### Higher incomes of savers associated with higher personal taxes

Despite very similar mean expenditures, patterns differ for spenders and savers (Table 2). In 1982, spenders devoted 80.7 cents of their expenditure dollar to current personal consumption, 12.8 to personal taxes, 3.6 to security, and 2.9 to gifts and contributions;<sup>4</sup> the corresponding breakdown for savers was 71.4, 20.6, 4.9, and 3.1. Savers allocated significantly less for current consumption but more for taxes because of their higher incomes.

**Table 2: Income and expenditures of spenders and savers**

	All households	Age of reference person							
		Spenders				Savers			
		Total	<45	45-64	65+	Total	<45	45-64	65+
<b>1982</b>									
					\$				
Average income	51,390	41,340	44,970	45,100	20,180	57,740	62,510	65,330	32,750
Average expenditure	47,800	48,300	51,950	53,230	24,980	47,490	52,930	52,960	24,390
					%				
Consumption	75.0	80.7	80.4	79.4	87.6	71.4	71.5	69.7	76.6
Personal taxes	17.6	12.8	13.6	13.0	4.7	20.6	21.1	21.8	14.2
Security	4.4	3.6	3.8	3.7	1.9	4.9	5.3	5.1	1.9
Gifts and contributions	3.0	2.9	2.1	3.9	5.8	3.1	2.1	3.4	7.3
<b>2001</b>									
					\$				
Average income	56,840	43,970	45,290	49,610	29,040	68,050	73,930	80,120	35,360
Average expenditure	55,340	53,760	55,540	59,920	36,580	56,710	62,380	66,220	29,030
					%				
Consumption	71.7	77.6	78.0	76.0	81.2	66.9	66.8	64.9	74.9
Personal taxes	20.8	15.7	15.6	17.0	11.8	25.0	25.6	26.2	17.9
Security	5.4	4.6	5.0	4.9	1.8	6.1	6.4	6.8	2.2
Gifts and contributions	2.1	2.2	1.5	2.1	5.1	2.0	1.2	2.1	4.9

Sources: Family Expenditure Survey, 1982; Survey of Household Spending, 2001

Note: All money figures in 2001 dollars

**Table 3: Where the money went**

	1982		2001	
	Spenders	Savers	Spenders	Savers
	2001 \$			
Food	7,390	7,310	6,060	6,470
Shelter	8,830	8,010	10,620	10,340
Household operation	2,190	2,010	2,520	2,560
Household furnishings and equipment	1,930	1,620	1,720	1,480
Clothing	3,110	2,840	2,310	2,340
Transportation	7,120	4,970	9,060	5,870
Health	950	920	1,390	1,350
Personal care	900	850	930	950
Recreation	2,480	2,040	3,430	3,240
Reading material and other printed matter	280	280	260	280
Education	380	300	960	780
Tobacco products, alcoholic beverages	1,800	1,480	1,340	1,230
Miscellaneous	1,620	1,270	1,110	1,050
<b>Total consumption</b>	<b>38,970</b>	<b>33,890</b>	<b>41,700</b>	<b>37,920</b>
Income tax	6,160	9,810	8,430	14,190
Security	1,750	2,330	2,450	3,460
Gifts and contributions	1,420	1,460	1,170	1,140
<b>Total expenditure</b>	<b>48,300</b>	<b>47,490</b>	<b>53,760</b>	<b>56,710</b>
<b>Total pre-tax income</b>	<b>41,340</b>	<b>57,740</b>	<b>43,970</b>	<b>68,050</b>
	%			
Food	15.3	15.4	11.3	11.4
Shelter	18.3	16.9	19.8	18.2
Household operation	4.5	4.2	4.7	4.5
Household furnishings and equipment	4.0	3.4	3.2	2.6
Clothing	6.4	6.0	4.3	4.1
Transportation	14.7	10.5	16.9	10.3
Health	2.0	1.9	2.6	2.4
Personal care	1.9	1.8	1.7	1.7
Recreation	5.1	4.3	6.4	5.7
Reading material and other printed matter	0.6	0.6	0.5	0.5
Education	0.8	0.6	1.8	1.4
Tobacco products, alcoholic beverages	3.7	3.1	2.5	2.2
Miscellaneous	3.4	2.7	2.1	1.8
<b>Total consumption</b>	<b>80.7</b>	<b>71.4</b>	<b>77.6</b>	<b>66.9</b>
Income tax	12.8	20.6	15.7	25.0
Security	3.6	4.9	4.6	6.1
Gifts and contributions	2.9	3.1	2.2	2.0
<b>Total expenditure</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Sources: Family Expenditure Survey, 1982; Survey of Household Spending, 2001

Note: All money figures in 2001 dollars

Two decades later, both groups were spending less on consumption and more on taxes and security. Of a dollar increase in expenditure, spenders spent 74 cents on consumption and 25 cents on taxes and security, compared with the savers' 57 and 43 cents.

### Spenders out-consume savers

Even though total expenditure for spending and saving households is quite similar, spenders actually consume substantially more than savers (Table 3). This is due to the standard definition of consumption,

which subtracts personal taxes, security expenditures (for example, EI and C/QPP premiums), and gifts and charitable contributions from total expenditure. Since personal taxes and security payments are higher for savers, less of their spending is devoted to consumption. On average, spenders consumed \$39,000 in goods and services in 1982, 15% more than the \$33,900 meted out by savers. Reflecting the greater increase in income for saving households between 1982 and 2001, their consumption increased faster than spending households (12% compared with 7%). Still, spenders continued to out-consume savers by 10% in 2001 (\$41,700 compared with \$37,900).

### Cars push spenders into the red

The greatest difference in consumption patterns between spending and saving households is transportation expenditures—mainly car purchases. In 1982, spending households dished out 43% more on transportation than did saving households. By 2001, the differential had grown to 54%. These differentials were driven by average car purchases of \$9,900 in 1982 and \$15,200 in 2001 for spenders, compared with \$6,400 and \$9,000 for savers. About one-fifth of both spenders and savers rented or leased a vehicle and spent, on average, about \$3,000 on it in 2001.<sup>5</sup>

Shelter expenses were the other major difference between spenders and savers in 1982 (\$8,800 versus \$8,000), but the gap had narrowed substantially by 2001. Spendings also consistently out-purchased savers, though by smaller margins, in household furnishings and equipment, recreation, education, and tobacco products and alcoholic beverages.



## Similar purchasing pattern changes for spenders and savers

Economic and market forces led to similar changes in purchasing patterns for both spending and saving households. Both groups spent more in 2001 on shelter, household operation, transportation, health, personal care, recreation, education, income tax and security; and less on food, household furnishings and equipment, clothing, reading and other printed materials, tobacco products and alcoholic beverages, miscellaneous, and gifts and contributions.<sup>6</sup>

## Conclusion

Between 1982 and 2001, the mean pre-tax income of Canadian households grew from \$51,400 to \$56,800 (11%) whereas expenditure jumped from \$47,800 to \$55,300 (16%). Not only did expenditure grow more than income, but households also paid relatively more of their income in personal income taxes (federal and provincial) and security (such as premiums for EI, C/QPP, and other government and non-government pensions), leaving less for personal consumption and saving.

At the same time, households increased their indebtedness for both mortgages and consumer debt. Per-capita debt doubled over the two decades. As a result, the proportion of households spending more than their income increased from 39% in 1982 to 47% in 2001. Spending households tended to be younger and to have lower incomes. They were also more likely to be renters or homeowners with a mortgage. Savers, with relatively higher incomes, tended to pay more for taxes and security.

Between 1982 and 2001, the proportion of spenders grew in all income classes and across all life-cycle phases. The incidence of outspending household income increased the most in the 45-to-64 age group. An increasing proportion of senior households also entered the spending ranks.

Spending households had expenditure levels similar to savings households, but substantially lower incomes. After netting out expenditures for taxes and security, spending households had substantially higher levels of current consumption. Spenders out-consumed savers by a small margin across a number of categories, but the main difference was spending on automobiles. These households spent thousands more per year on car purchases.

The influence of automobile purchases suggests a transitory component in the spender-saver split. In any year, a number of households that are long-run savers may borrow enough for the purchase of a car (or other expensive item) to slip into the red. This component is not trivial. In 2001, the purchase price of a car exceeded the net addition to household liabilities in 7 of 10 spending households. Nevertheless, spending households exhibit a greater propensity to consume in relation to their income and across a wide variety of goods and services. And an increasing number of households fit this mould.

Low interest rates and easy credit undoubtedly influence the inclination of households to borrow as household debt continues to rise to unprecedented levels in relation to household disposable income. But at the same time that households have been accumulating this debt, they have also seen a steady rise in their net worth. As a result, SNA estimates of the ratio of household debts to assets have remained in a narrow band of 16% to 19% over the past 14 years. Herein lies another factor related to increased consumption: the recent run-up in housing values. Bank of Canada studies (Macklem 1994; Pichette and Tremblay 2003) indicate that rising home equity has a positive effect on consumer spending.<sup>7</sup> Thus with resale values rising by a third over the past five years, it is no surprise that homeowners are feeling good about their finances and their ability to spend.

This debt-driven consumption and associated economic growth may be subject to peril. A sudden drop-off in the housing market or a sudden spike in interest rates could throw cold water on the spending party. On the other hand, the risks associated with the household sector are somewhat dampened by increased savings in the corporate and government sectors, recently noted in the System of National Accounts. Governments and the Bank of Canada may also use fiscal and monetary policies to dampen the effects of cyclical swings.

Interestingly, the increased propensity among older age groups to consume could help to offset a longer-run economic risk. Long-run forecasts that assume a more traditional life-cycle pattern of spending associate the aging population, notably the retirement of the baby boomers, with a decrease in economic activity. Assuming the boomers can accumulate enough wealth to support their consuming ways, the long-run picture may be a little brighter.



## ■ Notes

1 The rate of inflation in 1982 was 10.9% compared with 2.6% in 2001, and the trendsetting bank rate was 13.96% versus 4.31%. The bank rate, set by the Bank of Canada, affects not only the rate households pay on personal loans, mortgages, lines of credit and other consumer loans, but also what they receive as return on their savings and investments.

2 All of this mortgage debt may not necessarily be owed by first-time home buyers; it includes debt owed by those who may have remortgaged their home and used funds for business, investment or consumption.

3 The System of National Accounts treats pension benefits and RRSP withdrawals as dis-savings and thereby presents a more coherent picture of the life-cycle model. In this respect, senior savers as measured by their SHS total income might more properly be thought of as senior households with a positive cash flow.

4 Gifts were treated somewhat differently in the 1982 and 2001 surveys. The 1982 questionnaire contained a separate category for gifts, while in 2001 respondents were directed to include them under the relevant subject category (furniture, toys, and so forth), except for clothing. This creates a small upward bias in personal consumption in 2001 relative to 1982.

5 Since no separate data for expenditure on renting or leasing of automobiles or other vehicles were captured in 1982, this inference should be viewed with some caution. Averages here are for reporters only.

6 Households in the U.S. also spent less on food and clothing in 2000 than in 1990; like their Canadian counterparts, they spent relatively more on shelter, transportation and health. For details, see Weiss (2002).

7 Financial asset appreciation was also found to have a positive, but much weaker effect on consumer spending.

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# Property taxes relative to income

*Boris Palameta and Ian Macredie*

**P**roperty taxes (residential and non-residential) are by far the most important revenue source for local governments, accounting for 35% of all municipal revenue in 2003 (up from 30% in 1988). However, residential property taxes are commonly viewed as regressive in relation to income (Slack 2002). That is, lower-income homeowners pay proportionately more of their income for property taxes than their higher-income counterparts. This belief underlies certain provincial income-tax-relief programs for low-income homeowners, especially seniors. Similar programs are offered by a number of municipalities as part of the property tax system.<sup>1</sup>

A recent study substantiated the regressive nature of property taxes. Although property taxes as a proportion of property value do not vary across income brackets, lower-income families spend a higher proportion of their income on property tax than higher-income families. For example, in 1998, families with incomes below \$20,000 paid an average of 10% of their income in property taxes, compared with under 2% for families with incomes of \$100,000 or more. Thus, property taxes somewhat countered the redistributive effect of income taxes. Although income taxes reduced income inequality by 11%, property taxes increased it by 2% (Chawla and Wannell 2003).

This article uses data from the 2001 Census of Population (see *Data source and definitions*) to quantify the regressiveness of residential property taxes in various Canadian municipalities, and to examine whether regressive taxes are generally attributable to lower-income seniors living in high-priced homes.

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Differences among municipalities in terms of level of taxation or services provided are not examined; indeed, the level of taxation in a given municipality has no bearing on how regressive the tax is. Municipal tax rates (commonly called 'mill rates') are applied strictly on assessed property value regardless of homeowner income.<sup>2</sup> How regressive a property tax is has nothing to do with the mill rate; rather, it depends on how variable incomes are in relation to property values. If the distribution of incomes exactly matched the distribution of property values—for example, if households with twice the income of others lived in houses worth twice as much—then property taxes would not be regressive because the ability to pay would be directly proportional to the home value. In practice, however, incomes are more unequally distributed than property values (see *Why property taxes are regressive*). For example, in Toronto, a household in the highest income quartile (top 25%) may have five times the income but own a house worth only one and a half times as much as a household in the lowest income quartile.

Simply put, the regressive nature of property taxes has nothing to do with the tax level set by local governments. Regressiveness is a product of market forces that determine incomes and property values. Because income inequality and the distribution of residential property values vary from municipality to municipality, the regressiveness of property taxes will also vary. The result is that lower-income households pay a greater (often several times greater) proportion of their income on property taxes than high-income households.

## Estimating the relative tax burden of lower-income homeowners

To ensure reliable estimates, only predominantly urban municipalities with large sample sizes were selected (see *Selection of municipalities*).



## Data source and definitions

The analysis is based on the long questionnaire of the **2001 Census of Population**, sent to one in five occupied private households in Canada.

**Adjusted household income** is the sum of before-tax incomes of each member of the household, adjusted for household size and composition using an equivalence scale (Carson 2002). Adjusted household income reflects the fact that, at a given level of unadjusted income, spending power decreases as household size increases. Households with income of zero or less (primarily those whose incomes are from self-employment or investments) were excluded from the analysis.

Before-tax income is the only income measure available from the census. Since income taxes are progressive (they reduce income inequality), property taxes would be less regressive if measured as a function of after-tax income. However, property taxes are also less regressive if measured as a function of adjusted rather than unadjusted household income (as in this article), since inequality of unadjusted incomes is higher.

**Income quartiles** are obtained by ranking households according to adjusted income, applying household-level weights, and dividing the weighted population into four groups of equal size. The lowest quartile represents the bottom 25%, the second quartile the next 25%, and so on.

**Property value quartiles** are obtained the same way as income quartiles, substituting property value for income.

**Senior households** are those in which more than half of the total before-tax income came from household members aged 65 or older.

The **mill rate** is the amount of tax paid per dollar of assessed property value as set by local governments.

**Municipalities** are all represented in the census as **census subdivisions** (CSDs), which are precisely aligned with municipal boundaries. Although it may be interesting to know the property tax distribution in a particular census metropolitan area (CMA), the CSD is the more appropriate level of analysis. CMAs may include several CSDs, each with its own mill rate. Thus, within a given CMA, properties with the same assessed value may pay different amounts of tax, and the property tax distribution in the CMA may not reflect the property tax distribution in many of its CSDs. Analysis at the CSD level removes mill rate as a factor in property tax variability.

**Property tax** refers to the principal residence only. The census question was "What are the estimated **yearly** property taxes (municipal and school) for this dwelling?" [emphasis in the original].

Property tax information was not collected for rented dwellings, farm operator dwellings, collective dwellings, reserve dwellings, or band housing. These constituted 4.17 million (36%) of the 11.59 million households represented in the 2001 Census.

The remaining 7.42 million households, all owner-occupied, are included in this analysis. Roughly one in five reported no property tax, because it was included in their regular monthly mortgage or loan payments. Households reporting property tax represented all of the 3.32 million households without mortgages, but only 65% of the 4.10 million with mortgages. Given that households with mortgages are more likely to be occupied by non-senior owners with higher incomes (Chawla and Wannell 2004), excluding 35% of them would result in biased estimates. Therefore property taxes were imputed for the 35% of households with mortgages that did not report them, representing a total of 1.43 million households.

In theory, unreported property taxes in a given municipality could be imputed by simply multiplying the property value by the average ratio of property tax to property value in that municipality; the ratio would be roughly equal to the mill rate if reported property values represented assessed values. However, respondents were not asked for the assessed value, but rather an estimate of the current market value, in response to the question "If you were to sell this dwelling now, for how much would you expect to sell it?"

Market value is not necessarily a good proxy for assessed value, particularly for expensive houses. An analysis of property-tax-to-market-value ratios revealed that in most municipalities these ratios declined as market value increased. The use of an average tax-to-value ratio would therefore result in imputations that overestimate property taxes for high-priced homes and underestimate them for lower-priced homes. To account for this, four different ratios were computed for each municipality, corresponding to the median tax-to-value ratio at each property-value quartile. Unreported property taxes were imputed by first placing the property value in the appropriate quartile, then multiplying it by the median tax-to-value ratio of that quartile.

Owner-occupied households were divided into quartiles based on adjusted household income. The median percentage of adjusted household income spent on property tax (that is, the tax-to-income ratio) was estimated for the lowest and highest income quartiles. The relative tax burden borne by the lowest-income

households was defined as the ratio of the two medians. For example, if homeowners in the lowest income quartile paid a median of 10% of their income in property tax, while homeowners in the highest income quartile paid 5%, the relative tax burden would be  $10/5 = 2$ .

## Selection of municipalities

Because property tax values in the census are self-reported, they are subject to error. Inaccurate reporting may bias estimates, especially in small samples. In order to minimize bias, only municipalities with at least 400 dwellings reporting were selected.

A data-quality check was run on all municipalities with 400 or more records from two provinces: Ontario and Alberta. Residential property tax revenues from provincial administrative data (supplied to the Public Institutions Division) were compared with reported property tax totals from the census.<sup>3</sup> Two kinds of mismatches were identified:

- Because the administrative data included revenues from rented dwellings, the census totals should be lower. Municipalities for which the census totals were higher represented a mismatch.
- Because property taxes paid on owner-occupied dwellings were on average higher than those paid on rented dwellings, the ratio of the census total property tax to the administrative total for each municipality should be larger than the ratio of owner-occupied households to all households. Municipalities for which the opposite was true were identified as mismatches.

Mismatches were especially likely for municipalities in Ontario and Alberta with a substantial proportion of rural households. Accordingly, in all provinces and territories, only municipalities with less than 25% of households living in rural areas were selected for further analysis.

The selected sample of 342 municipalities breaks down as follows:

Newfoundland and Labrador: 7	Manitoba: 9
Prince Edward Island: 2	Saskatchewan: 10
Nova Scotia: 5	Alberta: 28
New Brunswick: 9	British Columbia: 57
Quebec: 135	Territories: 3
Ontario: 77	

The higher the relative tax burden, the more regressive the property tax. Each estimate of relative tax burden is paired with a measure of variability—the standard error—to reflect the level of uncertainty associated with that estimate.<sup>4</sup> Larger municipalities usually yield more precise estimates, and so tend to have smaller standard errors.

Municipalities were divided into three groups, based on how they compared with the municipality with the median relative tax burden: Kingston, Ontario. Group A's property taxes were significantly more regressive than Kingston's, while Group B's were significantly less regressive.<sup>5</sup> Group C municipalities did not differ significantly from Kingston. (To compare any pair of municipalities, follow the procedure in *Determining relative regressiveness*).

All municipalities in this analysis have regressive property taxes. Even in those with the least regressive, the tax-to-income ratio for the lowest-income homeowners is more than twice that of the highest-income ones.

## More regressive in municipalities within the largest CMAs

Municipalities with more regressive property taxes tend to be found in large census metropolitan areas (CMAs). For example, two-thirds of the municipalities in Group A are in the Montréal, Toronto or Vancouver CMAs, and 85% are in one of the 25 most populous CMAs. In contrast, only 15% of the municipalities in Group B are in one of the three largest CMAs (all in Montréal), and less than half are in one of the top 25.

Municipalities in large CMAs often have more regressive property taxes because they tend to have relatively unequal income distributions and/or relatively homogeneous housing prices (Table 1). For example, households in the highest income quartile in the municipality of Montréal have median incomes 4.4 times higher than those in the lowest income quartile, but houses with a median worth only 1.2 times as much. Similar patterns are found in

**Table 1: Income and property value inequality in selected municipalities**

	Inequality	
	Income*	Property**
<b>More regressive (Table 2, Group A)</b>		
Vancouver	5.53	1.25
Toronto	5.00	1.45
Montréal	4.38	1.23
Calgary	4.05	1.37
<b>Less regressive (Table 2, Group B)</b>		
Winnipeg	3.57	1.59
Regina	3.52	1.50
Halifax	3.72	1.58
Moncton	3.54	1.37

Source: Census of Population, 2001

\* (median household income, highest income quartile)/(median household income, lowest income quartile)

\*\* (median property value, highest income quartile)/(median property value, lowest income quartile)



### Why property taxes are regressive

Property taxes in Canada are regressive because household incomes are distributed more unequally than the assessed home values on which property taxes are based. This means that households in lower income brackets pay a share of tax that is larger than their share of income; the reverse is true for households in higher income brackets.

For example, in 1999, homeowners in the lowest income quintile (lowest 20%) paid tax on 15% of the total market value of all owned residences, while receiving only 7% of the income of all homeowners. Households in the highest income quintile, on the other hand, paid on 29% of market value and received 39% of income.

Ideally, the above figures would be based on assessed value rather than self-reported market value, since property taxes are set according to assessed value. Assessed values are not always updated annually, making them sometimes lower or higher than market values. However, unless under-assessment is more likely in the lowest income quintile, the pattern of results will not change. If anything, lower-priced housing seems more likely to be over-assessed (Harris and Lehman 2001), so the share of total assessed value held by the lowest income quintile may be even higher than their share of market value.

### Owner-occupied households

	Median after-tax income	Share of after-tax income	Share of market value
Quintile	\$	%	
Lowest	18,300	6.7	14.9
Second	31,300	12.7	16.8
Third	43,500	17.6	18.1
Fourth	58,300	23.7	21.4
Highest	85,100	39.3	28.8

Source: Survey of Financial Security, 1999

the municipalities of Vancouver, Toronto, and Calgary. Less regressive municipalities in large CMAs—for example, Winnipeg, Regina, Halifax, and Moncton—tend to have more heterogeneous housing prices and/or less unequal incomes.

### Not just a seniors' issue

Regressive property taxation is often perceived as especially problematic for seniors, whose homes typically have appreciated in value over many years while

their incomes have diminished.<sup>6</sup> This perception is implicit in the several tax-relief schemes targeted at seniors, either operating through provincial income tax or administered by the municipalities themselves. How accurate is the perception?<sup>7</sup>

Having established that lower-income homeowners have higher relative tax burdens, the next phase of the analysis looks at who among the lower-income homeowners has the greater tax burden—seniors or non-seniors. Only municipalities with at least 400 senior households reporting were included.

The median percentage of adjusted household income spent on property tax was estimated for non-senior and senior households in the lowest income quartile of each municipality (Table 3). The ratio of the two defines the tax burden of non-seniors relative to seniors. A ratio significantly greater than 1 means that non-seniors have the greater burden, while a ratio significantly less than 1 means that seniors have the greater burden.<sup>8</sup>

Do regressive property taxes affect seniors more than non-seniors? On the one hand, seniors are more likely to be in the lowest income quartile of homeowners, and therefore a higher percentage are affected by regressive property taxes. On the other hand, in terms of number, non-seniors make up the majority of lower-income homeowners in most municipalities.

Furthermore, in the vast majority of municipalities examined (94 out of 101) either no significant difference was seen, or non-seniors had the higher tax-to-income ratio—in some cases much higher. Seniors had the heavier burden in only seven municipalities, and in each case, the difference was relatively small—5% to 10%. Non-seniors had the heavier burden in 53 municipalities, and in almost half of them the difference was 25% or more.

Cases where non-seniors have the higher tax-to-income ratio but the difference is small could be the result of senior-targeted tax-relief schemes offered at the municipal level. In other cases, non-seniors may have a considerably greater tax burden because their incomes are lower or their property values are higher. For example, in Victoria, British Columbia, non-senior households in the lowest income quartile had lower median adjusted household incomes (\$15,500 versus \$16,600) and higher median property values (\$180,000 versus \$160,000) than their senior counterparts.



### Determining relative regressiveness

Although the relative tax burdens of two municipalities may look different, each represents an estimate calculated from a sample of dwellings, and, as such, is somewhat imprecise. Therefore, when comparing relative tax burdens, the errors must be taken into account. Consider the example below:

	Relative tax burden	Standard error
Municipality 1	8.50	0.20
Municipality 2	7.30	0.10

- 1) Compute the difference between their relative tax burdens:  $8.50 - 7.30 = 1.20$
- 2) Compute the standard error of the difference by using the following formula:  $\sqrt{SE_1^2 + SE_2^2}$   
In this case  $\sqrt{0.20^2 + 0.10^2} = 0.2236$
- 3) Using the standard error of the difference, compute a confidence interval around the difference.

First, multiply the standard error of the difference by a constant, which varies with the size of the confidence interval. In this analysis, a 99% confidence interval is recommended (see note 5), for which the constant is 2.576.

$$2.576 \times 0.2236 = 0.58$$

To set the upper limit of the interval, the product is added to the difference.

$$\text{Upper limit} = 1.20 + 0.58 = 1.78$$

To set the lower limit of the interval, the product is subtracted from the difference.

$$\text{Lower limit} = 1.20 - 0.58 = 0.62$$

The difference between municipalities 1 and 2 is therefore likely to lie somewhere between 0.62 and 1.78. Because the confidence interval does not include zero, the difference between the municipalities is said to be significantly different than zero. In other words, municipality 1 has property taxes that are significantly more regressive than those of municipality 2. If the confidence interval had included zero—in other words, if the lower limit had been a negative number while the upper limit had been positive—the conclusion would have been that there was no evidence for a significant difference between the municipalities.

Higher tax-to-income ratios for non-seniors seemed to be especially evident in British Columbia—21 out of the 23 municipalities examined. In 18 of them, the difference was 25% or more.

### Summary

Property taxes are regressive relative to income in every municipality studied here. Even in municipalities with the least regressive taxes, the lowest-income homeowners paid at least twice the amount of tax per dollar of income in relation to the highest-income homeowners. In some municipalities, particularly those in large census metropolitan areas, lower-income homeowners had a tax burden four or five times greater than their higher-income counterparts.

Regressive property taxes cannot be attributed simply to seniors with relatively low incomes living in relatively expensive houses. In fact, municipalities where lower-income non-seniors have the heavier tax burden far exceed those where the reverse is true.

Residential property is taxed strictly as a function of its assessed value. However, because income inequality is far greater than inequality in property values, lower-income homeowners end up spending a relatively large proportion of their income on property tax.

### Perspectives

Table 2: Relative property tax burdens: lowest/highest income

Group A: More regressive than the median municipality (Kingston, Ontario)			Group B: Less regressive than the median municipality (Kingston, Ontario)		
Municipality	CMA/CA	Ratio (standard error)	Municipality	CMA/CA	Ratio (standard error)
Anjou	Montréal*	3.98 (0.15)	Blainville	Montréal*	2.67 (0.06)
Beaconsfield	Montréal*	3.68 (0.13)	Brandon	Brandon	2.48 (0.09)
Brossard	Montréal*	3.55 (0.11)	Cap-Rouge	Québec*	2.70 (0.09)
Burnaby	Vancouver*	5.03 (0.14)	Cold Lake	Cold Lake	2.58 (0.14)
Calgary	Calgary*	3.32 (0.02)	Dieppe	Moncton	2.31 (0.11)
Chicoutimi	Chicoutimi-Jonquière*	3.37 (0.10)	Fredericton	Fredericton	2.76 (0.09)
Coquitlam	Vancouver*	4.56 (0.13)	Goderich		2.64 (0.13)
Côte-Saint-Luc	Montréal*	4.54 (0.16)	Granby (canton)	Granby	2.54 (0.13)
Delta	Vancouver*	3.37 (0.07)	Halifax	Halifax*	2.66 (0.03)
Dollard-des-Ormeaux	Montréal*	3.57 (0.12)	La Ronge		2.80 (0.004)
Elliot Lake	Elliot Lake	3.68 (0.16)	Lachenaie	Montréal*	2.57 (0.09)
Hamilton	Hamilton*	3.34 (0.03)	Lacombe		2.47 (0.14)
Hawkesbury	Hawkesbury	3.94 (0.27)	L'Assomption	Montréal*	2.65 (0.11)
Kirkland	Montréal*	3.99 (0.17)	Lloydminster (part, Alta.)	Lloydminster	2.61 (0.13)
Lachine	Montréal*	3.85 (0.16)	Moncton	Moncton	2.75 (0.07)
LaSalle	Montréal*	4.02 (0.11)	Moose Jaw	Moose Jaw	2.72 (0.10)
Laval	Montréal*	3.41 (0.04)	Mount Pearl	St. John's*	2.68 (0.08)
Leamington	Leamington	3.64 (0.13)	Portage la Prairie	Portage la Prairie	2.24 (0.15)
Markham	Toronto*	4.39 (0.07)	Quesnel	Quesnel	2.38 (0.21)
Mission	Abbotsford*	3.58 (0.15)	Regina	Regina*	2.50 (0.03)
Mississauga	Toronto*	3.50 (0.03)	Rock Forest	Sherbrooke*	2.68 (0.12)
Montréal	Montréal*	4.29 (0.05)	Sainte-Julie	Montréal*	2.62 (0.07)
Montréal-Nord	Montréal*	4.01 (0.12)	Saint-Émile	Québec*	2.59 (0.08)
Mont-Royal	Montréal*	5.77 (0.33)	Saint-Jean-Chrysostome	Québec*	2.49 (0.09)
North Vancouver (city)	Vancouver*	4.12 (0.28)	Saint-Luc	Saint-Jean-sur-Richelieu	2.61 (0.11)
North Vancouver (district municipality)	Vancouver*	3.82 (0.10)	Saskatoon	Saskatoon*	2.71 (0.04)
Oakville	Toronto*	3.42 (0.06)	St. Albert	Edmonton*	2.66 (0.07)
Outremont	Montréal*	5.40 (0.44)	Steinbach		2.38 (0.17)
Pierrefonds	Montréal*	3.47 (0.10)	Summerside	Summerside	2.31 (0.14)
Pointe-Claire	Montréal*	3.45 (0.11)	Varenes	Montréal*	2.52 (0.11)
Port Coquitlam	Vancouver*	3.60 (0.14)	Winnipeg	Winnipeg*	2.55 (0.02)
Québec	Québec*	3.24 (0.06)	Wood Buffalo	Wood Buffalo	2.63 (0.10)
Richmond	Vancouver*	5.63 (0.16)	Yellowknife	Yellowknife	2.65 (0.003)
Richmond Hill	Toronto*	4.60 (0.11)			
Rimouski	Rimouski	3.37 (0.10)			
Sainte-Foy	Québec*	3.33 (0.08)			
Saint-Lambert	Montréal*	3.84 (0.21)			
Saint-Laurent	Montréal*	4.45 (0.14)			
Saint-Léonard	Montréal*	4.23 (0.14)			
Salaberry-de-Valleyfield	Salaberry-de-Valleyfield	3.51 (0.14)			
Shawinigan	Shawinigan	3.89 (0.24)			
St. Catharines	St. Catharines-Niagara*	3.33 (0.05)			
Surrey	Vancouver*	3.60 (0.05)			
Thorold	St. Catharines-Niagara*	3.50 (0.16)			
Timmins	Timmins	3.33 (0.09)			
Toronto	Toronto*	4.11 (0.02)			
Trois-Rivières	Trois-Rivières	3.37 (0.11)			
Vancouver	Vancouver*	5.35 (0.12)			
Vaughan	Toronto*	3.58 (0.06)			
Verdun	Montréal*	4.59 (0.20)			
West Vancouver	Vancouver*	5.05 (0.22)			
Westmount	Montréal*	5.01 (0.33)			
Windsor	Windsor*	3.47 (0.05)			

Source: Census of Population, 2001  
\* 25 largest CMAs

A census metropolitan area (CMA) or census agglomeration (CA) is an area consisting of one or more adjacent municipalities situated around a major urban core. To form a census metropolitan area, the urban core must have a population of at least 100,000. To form a census agglomeration, the urban core must have a population of at least 10,000.

Source: Census of Population, 2001  
\* 25 largest CMAs

Table 2: Relative property tax burdens: lowest/highest income (continued)

Group C: Not significantly different from the median municipality (Kingston, Ontario)				
Municipality	CMA/CA	Ratio (standard error)		
Abbotsford	Abbotsford*	2.95 (0.08)	East St. Paul	Winnipeg*
Airdrie	Calgary*	2.88 (0.10)	Edmonton	Edmonton*
Ajax	Toronto*	2.97 (0.05)	Edmundston	Edmundston
Alma	Alma	3.29 (0.12)	Esquimalt	Victoria*
Amherst		2.36 (0.28)	Estevan	Estevan
Amos	Amos	2.62 (0.20)	Fleurimont	Sherbrooke*
Aurora	Toronto*	3.22 (0.08)	Fort Erie	St. Catharines-Niagara*
Aylmer	Ottawa-Hull*	3.05 (0.10)	Fort Frances	
Baie-Comeau	Baie-Comeau	3.28 (0.13)	Fort Saskatchewan	Edmonton*
Barrie	Barrie*	3.09 (0.05)	Fort St. John	Fort St. John
Bathurst	Bathurst	2.88 (0.15)	Gander	Gander
Beauport	Québec*	3.06 (0.06)	Gatineau	Ottawa-Hull*
Belleville	Belleville	2.98 (0.07)	Granby (ville)	Granby
Beloeil	Montréal*	3.00 (0.10)	Grand Falls-Windsor	Grand Falls-Windsor
Boisbriand	Montréal*	2.94 (0.10)	Grande Prairie	Grande Prairie
Bois-des-Filion	Montréal*	3.02 (0.17)	Grand-Mère	Shawinigan
Boucherville	Montréal*	3.00 (0.09)	Greater Sudbury	Greater Sudbury*
Bradford West Gwillimbury	Toronto*	2.99 (0.12)	Greenfield Park	Montréal*
Brampton	Toronto*	3.11 (0.03)	Grimsby	Hamilton*
Brantford	Brantford	3.09 (0.05)	Guelph	Guelph
Brockville	Brockville	2.96 (0.10)	Halton Hills	Toronto*
Brooks	Brooks	3.28 (0.12)	Hay River	
Buckingham	Ottawa-Hull*	2.92 (0.14)	High River	
Burlington	Hamilton*	3.18 (0.04)	Hinton	
Cambridge	Kitchener*	3.02 (0.05)	Hull	Ottawa-Hull*
Campbell River	Campbell River	3.26 (0.13)	Iberville	Saint-Jean-sur-Richelieu
Camrose	Camrose	3.06 (0.13)	Ingersoll	
Candiac	Montréal*	2.97 (0.16)	Innisfil	Barrie*
Canmore		2.85 (0.19)	Joliette	Joliette
Cap-de-la-Madeleine	Trois-Rivières	2.92 (0.10)	Jonquière	Chicoutimi-Jonquière*
Cape Breton	Cape Breton	3.00 (0.08)	Kamloops	Kamloops
Carleton Place		2.73 (0.13)	Kapuskasing	
Castlegar		2.93 (0.23)	Kelowna	Kelowna*
Central Okanagan G	Kelowna*	2.84 (0.18)	Kenora	Kenora
Central Okanagan H	Kelowna*	3.45 (0.19)	Kimberley	
Central Saanich	Victoria*	3.12 (0.17)	Kingston	Kingston
Chambly	Montréal*	2.98 (0.09)	Kirkland Lake	
Charlesbourg	Québec*	3.12 (0.05)	Kitchener	Kitchener*
Charlottetown	Charlottetown	2.75 (0.11)	Kitimat	Kitimat
Charny	Québec*	3.28 (0.19)	La Baie	Chicoutimi-Jonquière*
Châteauguay	Montréal*	3.05 (0.07)	La Plaine	Montréal*
Chibougamau		3.15 (0.18)	La Prairie	Montréal*
Chilliwack	Chilliwack	3.07 (0.09)	La Tuque	La Tuque
Clarington	Oshawa*	2.99 (0.06)	Labrador City	Labrador City
Coaticook		3.22 (0.29)	Lachute	Lachute
Cobourg	Cobourg	2.99 (0.12)	Lac-Saint-Charles	Québec*
Cochrane	Calgary*	2.89 (0.14)	L'Ancienne-Lorette	Québec*
Coldstream	Vernon	3.02 (0.23)	Langford	Victoria*
Collingwood	Collingwood	3.17 (0.15)	Langley (city)	Vancouver*
Colwood	Victoria*	2.70 (0.14)	LaSalle	Windsor*
Comox	Courtenay	3.03 (0.15)	Le Gardeur	Montréal*
Conception Bay South	St. John's*	3.12 (0.16)	Leduc	Edmonton*
Corner Brook	Corner Brook	3.01 (0.11)	Lethbridge	Lethbridge
Cornwall	Cornwall	3.05 (0.07)	Lévis	Québec*
Courtenay	Courtenay	3.00 (0.18)	L'Île-Bizard	Montréal*
Cowansville	Cowansville	3.41 (0.29)	L'Île-Perrot	Montréal*
Cranbrook	Cranbrook	2.88 (0.14)	London	London*
Dauphin		2.47 (0.24)	Longueuil	Montréal*
Dawson Creek	Dawson Creek	3.13 (0.21)	Loretteville	Québec*
Deux-Montagnes	Montréal*	2.89 (0.12)	Lorraine	Montréal*
Dolbeau-Mistassini	Dolbeau-Mistassini	3.01 (0.17)	Magog	Magog
Dorval	Montréal*	3.21 (0.18)	Maple Ridge	Vancouver*
Drumheller		2.58 (0.20)	Mascouche	Montréal*
Drummondville	Drummondville	2.97 (0.08)	Masson-Angers	Ottawa-Hull*
Dryden		2.86 (0.17)	Matane	Matane
			Medicine Hat	Medicine Hat
			Mercier	Montréal*
			Midland	Midland
			Miramichi	
			Montmagny	
			Mont-Saint-Hilaire	Montréal*
			Nanaimo	Nanaimo



Table 2: Relative property tax burdens: lowest/highest income (concluded)

Group C: Not significantly different from the median municipality (Kingston, Ontario)					
Municipality	CMA/CA	Ratio (standard error)			
Nelson		2.85 (0.30)	Sainte-Thérèse	Montréal*	2.81 (0.11)
New Glasgow	New Glasgow	2.71 (0.21)	Saint-Étienne-de-Lauzon	Québec*	2.96 (0.12)
New Westminster	Vancouver*	3.57 (0.21)	Saint-Eustache	Montréal*	2.96 (0.08)
Newmarket	Toronto*	3.12 (0.07)	Saint-Félicien		2.88 (0.16)
Niagara Falls	St. Catharines-Niagara*	3.22 (0.07)	Saint-Georges	Saint-Georges	3.32 (0.15)
North Battleford	North Battleford	2.83 (0.13)	Saint-Hubert	Montréal*	3.02 (0.06)
North Bay	North Bay	2.88 (0.06)	Saint-Hyacinthe	Saint-Hyacinthe	3.07 (0.10)
Notre-Dame-de-l'Île-Perrot	Montréal*	2.73 (0.24)	Saint-Jean-sur-Richelieu	Saint-Jean-sur-Richelieu	3.22 (0.14)
Notre-Dame-des-Prairies	Joliette	3.10 (0.24)	Saint-Jérôme	Montréal*	3.53 (0.22)
Oak Bay	Victoria*	3.45 (0.19)	Saint-Louis-de-France	Trois-Rivières	3.02 (0.18)
Okotoks		3.16 (0.14)	Saint-Romuald	Québec*	3.03 (0.22)
Orangeville	Toronto*	2.88 (0.08)	Saint-Timothée	Salaberry-de-Valleyfield	3.16 (0.17)
Orillia	Orillia	3.08 (0.09)	Sarnia	Sarnia	2.97 (0.07)
Oshawa	Oshawa*	3.19 (0.05)	Saugeen Shores		3.29 (0.17)
Ottawa	Ottawa-Hull*	3.01 (0.02)	Sault Ste. Marie	Sault Ste. Marie	2.99 (0.07)
Otterburn Park	Montréal*	2.91 (0.12)	Selkirk		2.62 (0.17)
Owen Sound	Owen Sound	3.03 (0.11)	Sept-Îles	Sept-Îles	3.35 (0.12)
Parksville	Parksville	2.97 (0.23)	Shawinigan-Sud	Shawinigan	2.99 (0.11)
Pelham	St. Catharines-Niagara*	3.12 (0.11)	Sherbrooke	Sherbrooke*	3.22 (0.09)
Pembroke	Pembroke	3.34 (0.20)	Sidney	Victoria*	2.94 (0.22)
Penetanguishene	Midland	3.30 (0.20)	Sillery	Québec*	3.46 (0.26)
Penticton	Penticton	2.89 (0.17)	Smiths Falls		2.92 (0.16)
Peterborough	Peterborough	3.19 (0.06)	Sorel-Tracy	Sorel-Tracy	3.14 (0.10)
Pickering	Toronto*	3.10 (0.07)	Spruce Grove	Edmonton*	2.84 (0.14)
Pincourt	Montréal*	3.05 (0.12)	Squamish	Squamish	2.59 (0.23)
Pitt Meadows	Vancouver*	2.79 (0.15)	St. John's	St. John's*	2.93 (0.06)
Pointe-du-Lac	Trois-Rivières	2.96 (0.27)	St. Thomas	London*	3.21 (0.10)
Port Alberni	Port Alberni	3.22 (0.17)	Stony Plain	Edmonton*	2.95 (0.19)
Port Colborne	St. Catharines-Niagara*	3.22 (0.14)	Stratford	Stratford	3.04 (0.09)
Port Hope and Hope	Port Hope and Hope	3.09 (0.10)	Strathmore		2.94 (0.14)
Port Moody	Vancouver*	3.57 (0.26)	Strathroy-Caradoc	London*	3.17 (0.13)
Powell River	Powell River	3.16 (0.18)	Swift Current	Swift Current	2.69 (0.15)
Prince Albert	Prince Albert	2.93 (0.11)	Taber		2.86 (0.18)
Prince George	Prince George	2.86 (0.07)	Tecumseh	Windsor*	3.29 (0.13)
Prince Rupert	Prince Rupert	3.19 (0.23)	Terrace	Terrace	2.74 (0.18)
Qualicum Beach	Parksville	3.02 (0.27)	Terrebonne	Montréal*	3.16 (0.07)
Red Deer	Red Deer	3.05 (0.07)	Thetford Mines	Thetford Mines	2.77 (0.11)
Renfrew		2.76 (0.13)	Thompson	Thompson	2.55 (0.18)
Repentigny	Montréal*	3.00 (0.06)	Thunder Bay	Thunder Bay	2.97 (0.05)
Revelstoke		3.18 (0.37)	Tillsonburg	Tillsonburg	3.19 (0.14)
Riverview	Moncton	2.76 (0.11)	Trail		2.48 (0.22)
Rivière-du-Loup	Rivière-du-Loup	3.06 (0.16)	Trois-Rivières-Ouest	Trois-Rivières	2.98 (0.13)
Roberval		2.88 (0.16)	Truro	Truro	2.79 (0.18)
Rosemère	Montréal*	3.17 (0.18)	Val-Bélair	Québec*	2.98 (0.10)
Rothsay	Saint John	2.79 (0.11)	Val-d'Or	Val-d'Or	3.27 (0.15)
Rouyn-Noranda	Rouyn-Noranda	3.40 (0.16)	Vaudreuil-Dorion	Montréal*	3.26 (0.17)
Saanich	Victoria*	3.08 (0.06)	Vernon	Vernon	2.84 (0.10)
Saint John	Saint John	3.06 (0.08)	Victoria	Victoria*	3.24 (0.11)
Saint-Antoine	Montréal*	2.87 (0.14)	Victoriaville	Victoria*	3.12 (0.08)
Saint-Augustin-de-Desmaures	Québec*	2.98 (0.14)	Waterloo	Kitchener*	3.06 (0.07)
Saint-Basile-le-Grand	Montréal*	2.85 (0.15)	Welland	St. Catharines-Niagara*	3.07 (0.08)
Saint-Bruno-de-Montarville	Montréal*	3.30 (0.10)	Wetaskiwin	Wetaskiwin	2.84 (0.22)
Saint-Charles-Borromée	Joliette	2.88 (0.15)	Weyburn		2.87 (0.20)
Saint-Constant	Montréal*	2.85 (0.08)	Whitby	Oshawa*	2.95 (0.05)
Sainte-Anne-des-Plaines	Montréal*	3.05 (0.18)	White Rock	Vancouver*	2.96 (0.23)
Sainte-Catherine	Montréal*	2.92 (0.09)	Whitecourt		3.02 (0.18)
Sainte-Marie		3.27 (0.16)	Whitehorse	Whitehorse	2.96 (0.18)
Sainte-Marthe-sur-le-Lac	Montréal*	3.13 (0.17)	Williams Lake	Williams Lake	2.87 (0.24)
			Winkler		2.65 (0.17)
			Woodstock	Woodstock	3.05 (0.10)
			Yorkton	Yorkton	2.82 (0.14)

Source: Census of Population, 2001

\* 25 largest CMAs

Table 3: Property tax burden of lowest-income seniors and non-seniors

		Seniors in		Relative tax burden	
		Lowest income quartile	Overall population	Non-seniors/seniors	Standard error
<b>Municipalities in which non-seniors have a higher tax burden</b>		%			
Abbotsford	British Columbia	47.3	26.3	2.37	(0.15)
Brantford	Ontario	45.6	23.6	1.10	(0.04)
Burnaby	British Columbia	35.1	22.6	1.75	(0.08)
Cape Breton	Nova Scotia	36.2	25.6	1.49	(0.05)
Chicoutimi	Quebec	37.5	17.5	1.12	(0.04)
Chilliwack	British Columbia	49.0	29.1	1.49	(0.07)
Coquitlam	British Columbia	29.1	15.5	1.89	(0.11)
Cornwall	Ontario	42.5	27.4	1.20	(0.06)
Côte-Saint-Luc	Quebec	57.9	46.1	1.13	(0.04)
Delta	British Columbia	33.6	18.1	1.13	(0.04)
Edmonton	Alberta	35.5	19.4	1.04	(0.01)
Fort Erie	Ontario	45.8	26.9	1.27	(0.09)
Fredericton	New Brunswick	36.5	24.8	1.20	(0.07)
Greater Sudbury	Ontario	42.3	21.8	1.14	(0.03)
Halifax	Nova Scotia	31.1	17.5	1.07	(0.02)
Hamilton	Ontario	45.6	23.1	1.08	(0.02)
Innisfil	Ontario	46.5	22.7	1.41	(0.09)
Kamloops	British Columbia	43.0	21.8	1.27	(0.05)
Kelowna	British Columbia	55.8	32.9	1.70	(0.08)
LaSalle	Quebec	45.5	26.4	1.20	(0.06)
Laval	Quebec	33.8	17.5	1.05	(0.02)
Lethbridge	Alberta	41.3	25.0	1.16	(0.04)
Maple Ridge	British Columbia	38.4	18.3	1.23	(0.05)
Markham	Ontario	16.0	11.7	1.15	(0.04)
Medicine Hat	Alberta	49.9	27.9	1.36	(0.06)
Montréal	Quebec	43.2	24.0	1.10	(0.02)
Montréal-Nord	Quebec	47.2	31.5	1.36	(0.11)
Moose Jaw	Saskatchewan	44.2	29.3	1.36	(0.08)
Nanaimo	British Columbia	46.7	29.1	1.52	(0.08)
New Westminster	British Columbia	51.2	23.9	1.57	(0.12)
North Vancouver (City)	British Columbia	50.9	24.9	1.45	(0.12)
North Vancouver (District)	British Columbia	36.7	20.8	1.14	(0.05)
Penticton	British Columbia	63.0	40.1	1.71	(0.14)
Pierrefonds	Quebec	25.2	15.8	1.14	(0.04)
Québec	Quebec	39.0	20.2	1.09	(0.03)
Richmond	British Columbia	26.1	19.2	2.23	(0.11)
Richmond Hill	Ontario	22.4	11.9	1.41	(0.05)
Saanich	British Columbia	48.5	30.7	1.28	(0.04)
Saint John	New Brunswick	39.2	25.2	1.19	(0.05)
Saint-Hubert	Quebec	26.5	11.5	1.12	(0.04)
Saint-Laurent	Quebec	44.5	29.9	1.20	(0.06)
Saint-Léonard	Quebec	58.7	32.2	1.30	(0.07)
St. Catharines	Ontario	49.0	28.2	1.12	(0.03)
Surrey	British Columbia	33.3	18.8	1.64	(0.05)
Thunder Bay	Ontario	47.9	24.4	1.14	(0.04)
Timmins	Ontario	40.4	18.0	1.15	(0.05)
Trois-Rivières	Quebec	42.5	25.2	1.20	(0.06)
Vancouver	British Columbia	34.1	21.4	1.46	(0.04)
Vernon	British Columbia	59.6	34.2	1.68	(0.14)
Victoria	British Columbia	51.9	34.2	1.41	(0.08)
Welland	Ontario	51.9	26.2	1.21	(0.07)
West Vancouver	British Columbia	46.9	33.9	1.58	(0.10)
White Rock	British Columbia	69.5	41.7	1.91	(0.22)

Table 3: Property tax burden of lowest-income seniors and non-seniors (concluded)

		Seniors in		Relative tax burden	
		Lowest income quartile	Overall population	Non-seniors/seniors	Standard error
<b>Municipalities in which seniors have a higher tax burden</b>		%			
Cambridge	Ontario	36.5	15.8	0.94	(0.02)
Mississauga	Ontario	22.9	12.0	0.95	(0.02)
Oakville	Ontario	31.4	16.1	0.93	(0.03)
Oshawa	Ontario	36.9	18.9	0.90	(0.02)
Ottawa	Ontario	29.1	18.3	0.93	(0.01)
Sainte-Foy	Quebec	41.4	27.3	0.90	(0.03)
Vaughan	Ontario	24.2	10.6	0.94	(0.02)
<b>Municipalities with no significant difference</b>					
Barrie	Ontario	30.2	15.1	0.96	(0.03)
Beauport	Quebec	33.2	14.4	0.95	(0.03)
Belleville	Ontario	45.2	29.1	1.03	(0.04)
Brampton	Ontario	17.1	8.5	0.96	(0.02)
Brandon	Manitoba	38.4	23.3	1.06	(0.06)
Brossard	Quebec	26.1	14.6	1.15	(0.06)
Burlington	Ontario	38.7	20.8	0.97	(0.02)
Calgary	Alberta	28.2	14.7	0.98	(0.01)
Charlesbourg	Quebec	36.0	18.9	0.96	(0.03)
Châteauguay	Quebec	36.7	19.5	1.01	(0.04)
Clarington	Ontario	34.0	14.9	0.97	(0.04)
Gatineau	Quebec	26.4	11.2	1.00	(0.03)
Guelph	Ontario	40.6	20.3	0.95	(0.03)
Hull	Quebec	38.3	18.6	0.90	(0.05)
Jonquière	Quebec	37.7	19.2	1.13	(0.06)
Kingston	Ontario	38.4	26.7	1.01	(0.03)
Kitchener	Ontario	39.0	18.2	0.98	(0.02)
London	Ontario	36.1	21.4	1.02	(0.02)
Longueuil	Quebec	38.0	17.2	1.07	(0.04)
Moncton	New Brunswick	39.1	22.7	1.06	(0.04)
Niagara Falls	Ontario	51.6	27.8	1.00	(0.05)
North Bay	Ontario	43.2	25.1	1.06	(0.04)
Oak Bay	British Columbia	54.5	40.5	1.25	(0.11)
Orillia	Ontario	48.6	29.7	1.10	(0.05)
Peterborough	Ontario	46.0	31.1	1.00	(0.03)
Pickering	Ontario	22.1	10.1	0.98	(0.03)
Prince George	British Columbia	28.7	12.9	1.12	(0.05)
Red Deer	Alberta	31.6	17.6	1.03	(0.04)
Regina	Saskatchewan	34.9	19.7	1.06	(0.02)
Repentigny	Quebec	29.6	13.9	1.09	(0.04)
Sarnia	Ontario	39.4	25.7	1.09	(0.04)
Saskatoon	Saskatchewan	32.5	20.6	1.02	(0.02)
Sault Ste. Marie	Ontario	45.7	25.7	1.06	(0.04)
Sherbrooke	Quebec	39.3	24.5	1.13	(0.05)
St. John's	Newfoundland and Labrador	35.4	19.6	1.05	(0.03)
Toronto	Ontario	41.1	23.5	1.02	(0.01)
Waterloo	Ontario	36.4	19.7	1.01	(0.04)
Whitby	Ontario	25.6	11.6	0.99	(0.04)
Windsor	Ontario	48.0	23.5	1.05	(0.02)
Winnipeg	Manitoba	36.3	20.8	1.03	(0.01)
Woodstock	Ontario	46.6	23.1	0.98	(0.05)

Source: Census of Population, 2001



## ■ Notes

1 This study is based on income before income tax. As a result, the effects of provincial property-tax relief systems operating through the income tax system are not captured. However, rebate schemes operating through the municipal tax system *are* captured, since they directly affect property tax paid. No national data exist on the aggregate size of the tax abatement of either of these types of programs, but the amounts are generally believed to be small and to affect only the low end of the income distribution.

2 All provinces now aim to equate assessed values with market prices; previously, assessed values were based on a property's physical characteristics. The mill rate is generally a flat tax in that the same rate is applied to a property regardless of assessed value. Depending on the municipality, mill rates for rental properties (excluded from this study), or for some other specific types of properties may vary slightly.

3 In its government finance statistics program, the Public Institutions Division generates data on local government only at the provincial level and does not distinguish between residential and non-residential property taxes. Nevertheless, this division received data for individual municipalities from several provinces and, in the case of Ontario and Alberta, property tax revenues were divided into their residential and non-residential components.

4 Medians and confidence intervals were computed with SUDAAN, version 8. The design according to which households were selected to receive the long questionnaire was assumed to be equivalent to stratified random sampling without replacement.

5 Two factors affect the accuracy of standard error estimation. First, the imputation of property tax for some dwellings in each municipality leads to underestimation. Second, the covariance between higher and lower income homeowners was deemed to be negligible under the assumption that they tend to live in different areas. This sometimes erroneous assumption leads to overestimation.

Although it is tempting to say that the two factors balance each other out, it is impossible to determine to what extent each one influences the standard error estimate. Therefore, a conservative approach was used to test for statistical significance. Instead of the conventional 95% confidence interval, 99% confidence intervals were computed.

6 However, the problem in terms of spending power may be mitigated by the mortgage-free status of many senior homeowners (Chawla and Wannell 2004).

7 This study looks only at property taxes in relation to income, not all the costs of owning a home. The broader area of housing affordability is influenced by a variety of tax measures in addition to property tax rebates, including energy tax rebates, GST rebates, and so on.

8 Significance testing was conducted with 99% confidence intervals (see note 5).

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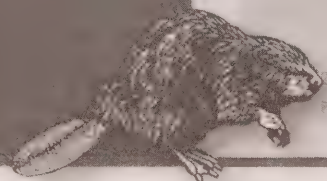
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# Diverging trends in unionization

By René Morissette, Grant Schellenberg and Anick Johnson

Since the early 1980s, the proportion of Canadian workers belonging to labour unions has declined considerably. A striking aspect of this trend has been the extent to which it has affected some groups of workers more than others—in particular, men, younger workers, and those in goods-producing industries.

The demographic characteristics distinguishing unionized from non-unionized workers changed significantly over the period. In 1981, differences were particularly evident by sex, whereas in 2004, age was the salient factor.

Using various Statistics Canada surveys, this article examines unionization rates from 1981 to 2004, focusing on the extent to which the trends reflect changes in the distribution of employment by occupation, industry, or other characteristics (see *Data sources and definitions*). In addition, the effect of changes in unionization on earnings and pension coverage is discussed.

## Trends by sex and age

The proportion of unionized employees fell from 38% to 31% between 1981 and 2004 (Table 1). A fairly small portion of the decline occurred during the 1980s (2 percentage points) while most took place between 1989 and 1998 (5 points). Since 1998, the rate has remained quite stable.

Despite the overall decline in unionization rates between 1981 and 2004, differences were seen particularly between men and women, younger and older workers, and the commercial and public-service sectors.

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## Data sources and definitions

The study used the **Survey of Work History** (1981), the **Labour Market Activity Survey** (1986 and 1989), and the **Labour Force Survey** (1998, 2001 and 2004). Each covered the same population, was based on the Labour Force Survey sample design, and collected information on union status in the employee's main job. The main job was the one with the most hours per week.

The analysis focused on individuals aged 17 to 64 who were employees in the main job they held in May. Because the Survey of Work History did not ask about workers not belonging to a union but covered by a collective agreement, **unionization rate** is defined as the percentage of employees belonging to a union. Individuals not belonging to a union but covered by a collective agreement are classified as non-union.

Trends in unionization rates based on household surveys may tend to overstate the decline in union coverage. Although the Corporations and Labour Unions Returns Act (CALURA) indicates that union coverage varied from 32.5% to 32.3% between 1989 and 1995 (Mainville and Olineck 1999), the 1989 Labour Market Activity Survey and the November 1995 Survey of Work Arrangements show it falling from 35.9% to 33.3%. While household surveys account for all unionized workers, CALURA covers only workers belonging to unions with 100 or more members. Hence, the different trends may partly reflect differences in coverage. Since CALURA data end in 1995, it is difficult to assess the extent to which the decline in union coverage is overstated for the 1981-2004 period. For this reason, most of the analysis in this article focuses on *relative* trends in union coverage.

The rate for men declined by almost 12 percentage points, compared with less than one point for women, resulting in a convergence of the two rates by the end of the period.

Younger workers, particularly those under 35, experienced more pronounced declines than older workers. Again, differences between men and women were evident. Among men, unionization rates fell in all age groups, but the decline was twice as large among those aged 17 to 44 than among those 45 to 64 (15 and 7 percentage points respectively). The largest decline was for men aged 25 to 34, where rates fell by almost half.



**Table 1: Unionization rate by sex, age and sector**

	1981	1986	1989	1998	2001	2004	1981-2004
	%						Change
<b>Both sexes</b>	37.6	36.0	35.9	30.7	30.2	30.6	-7.0
Men	42.1	39.9	39.2	31.6	31.0	30.4	-11.7
Women	31.4	31.2	32.1	29.8	29.4	30.8	-0.6
<b>Age</b>							
17 to 24	26.4	17.1	18.4	11.9	13.2	13.6	-12.8
25 to 34	39.8	36.4	34.7	25.0	25.8	26.1	-13.6
35 to 44	42.0	43.3	42.9	35.8	32.8	32.8	-9.2
45 to 54	41.7	43.4	44.6	42.8	41.8	41.2	-0.6
55 to 64	41.9	43.8	41.6	38.4	37.4	38.2	-3.7
<b>Men</b>							
17 to 44	39.9	36.5	35.8	26.7	26.1	25.2	-14.6
17 to 24	29.2	19.3	19.9	12.5	14.0	15.0	-14.2
25 to 34	43.3	38.4	37.1	24.8	25.2	23.9	-19.3
35 to 44	46.1	47.2	45.6	36.3	33.9	32.7	-13.4
45 to 64	48.1	49.5	49.2	44.1	42.2	40.8	-7.3
45 to 54	47.8	49.2	49.9	45.5	44.3	42.0	-5.8
55 to 64	48.6	49.9	48.0	40.6	36.9	38.2	-10.4
<b>Women</b>							
17 to 44	31.2	30.1	30.8	26.3	25.1	26.2	-5.0
17 to 24	23.1	14.9	16.8	11.3	12.3	12.2	-11.0
25 to 34	34.7	34.0	32.0	25.2	26.3	28.5	-6.3
35 to 44	36.3	38.4	39.9	35.3	31.6	32.9	-3.4
45 to 64	31.8	35.2	36.2	39.0	38.9	39.8	8.0
45 to 54	32.9	35.9	38.2	40.1	39.3	40.4	7.5
55 to 64	29.9	33.9	31.7	35.5	37.9	38.2	8.3
<b>Sector</b>							
Public services	61.4	60.8	61.5	60.8	61.2	61.4	0.0
Men	64.0	63.9	64.6	62.9	64.7	62.8	-1.2
Women	59.5	58.8	59.6	59.8	59.8	60.8	1.3
Commercial sector*	29.8	27.0	26.8	20.3	20.1	20.0	-9.9
Men	37.2	34.2	33.6	25.3	25.2	24.5	-12.7
Women	17.2	15.8	17.2	13.4	12.9	13.7	-3.4

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

\* All industries except public services.

The relatively modest decline for women also concealed divergent trends for younger and older age groups. Unionization rates declined by 5 percentage points for women aged 17 to 44, while increasing by 8 points for those 45 to 64. As a result, rates for the two age groups diverged, from a difference of less than one percentage point in 1981 to almost 14 points in 2004. The same divergence was evident for younger and older men. For example, the difference in rates between men aged 25 to 34 and those 45 to 54 increased from 5 to 18 percentage points. In this respect, unionization in Canada has become far more polarized by age (Chart).

### Trends in different industries

Trends in unionization also varied by industry. In public services—broadly defined as health and social services, education and related services, government, and religious organizations—rates remained fairly constant

between 1981 and 2004: around 64% for men and 60% for women. In contrast, the commercial sector saw a decline of almost 10 percentage points, with a far larger drop for men than for women (13 versus 3 points). The overall decline in unionization was therefore due entirely to trends in the commercial sector.

Unionization has historically been low in some industries such as consumer services; business services; and agriculture, fishing and trapping. Between 1981 and 1998, the decline in rates was quite modest in these industries (Table 2).

In contrast, declines were large in goods-producing and distributing industries, where the union presence has traditionally been higher. For example, between 1981 and 1998, unionization rates in forestry and mining dropped a full 20

### Unionization: CALURA versus household surveys

	CALURA*	Household surveys**
	%	
1986	32.6	36.0
1987	31.9	..
1988	32.0	..
1989	32.5	35.9
1990	33.1	..
1991	33.4	..
1992	33.2	..
1993	32.5	..
1994	32.1	..
1995	32.3	33.3

See Mainville and Olineck 1999, Table 3.

\* The Corporations and Labour Unions Returns Act covered only bargaining units with 100 or more members.

\*\* Labour Market Activity Survey, 1986 and 1989 (main job held in May); Survey of Work Arrangements, 1995 (main job held in November).

percentage points, construction and manufacturing 13 points, and distributive services almost 10 points. Quite clearly, changes within goods-producing industries have been central to the overall decline in unionization since the early 1980s.

Interestingly, the drop in unionization rates occurred at different times for different areas of the goods-producing industries. In forestry, mining and construction, declines were evident in both the 1980s and 1990s. In contrast, manufacturing showed little change between 1981 and 1989 (down only 2 percentage points), with most of the fall occurring between 1989 and 1998 (down 11 points).

### Provincial trends

Although unionization fell in all provinces between 1981 and 2004, the magnitude varied considerably. Declines were smallest in Manitoba and Saskatchewan—less than 3 percentage points overall, and about 6 to 7 points in the commercial sector (Table 3). In 2004, Manitoba and Saskatchewan had unionization rates above the national average.

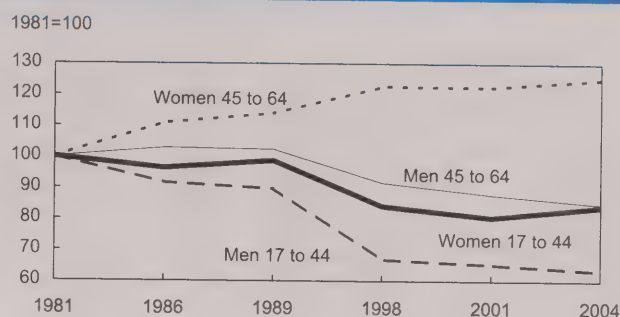
In Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario and Alberta, overall rates fell about 6 to 8 points, with declines of about 8 to 11 points in the commercial sector. In 2004, unionization rates in these provinces ranged from 22% in Alberta to 39% in Newfoundland and Labrador.

Rates fell the most in New Brunswick and British Columbia—11 and 10 points respectively. These provinces witnessed particularly large declines in the commercial sector. In New Brunswick, for example, unionization fell by almost half—from 29% to 16%.

### A closer look at the commercial sector

The commercial sector experienced large changes in terms of hours of work and job tenure. Unionization was higher among full-time than

**Chart: Trends in unionization, by sex and age for selected years**



Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

**Table 2: Unionization rate by industry**

	1981	1986	1989	1998	1981-1998
<b>Both sexes</b>					
	%				Change
Commercial sector	29.8	27.0	26.8	20.3	-9.5
Agriculture, fishing and trapping	6.4	5.3	11.2	4.0	-2.4
Forestry and mining	46.0	34.3	32.5	26.3	-19.7
Construction	39.9	35.3	33.3	27.0	-12.9
Manufacturing	43.9	42.6	42.2	31.3	-12.6
Distributive services	43.0	42.8	40.4	33.1	-9.9
Business services	5.7	8.4	9.1	6.9	1.2
Consumer services	13.7	12.0	13.3	11.0	-2.8
Public services	61.4	60.8	61.5	60.8	-0.6
<b>Men</b>					
Commercial sector	37.2	34.2	33.6	25.3	-11.9
Agriculture, fishing and trapping	7.6	6.7	10.6	4.7	-2.8
Forestry and mining	48.8	38.2	35.9	29.8	-19.0
Construction	44.5	39.4	37.8	30.9	-13.5
Manufacturing	48.3	48.4	46.4	35.5	-12.8
Distributive services	46.6	44.8	42.0	34.2	-12.4
Business services	6.2	9.4	10.6	7.5	1.3
Consumer services	16.6	14.6	15.9	12.2	-4.5
Public services	64.0	63.9	64.6	62.9	-1.1
<b>Women</b>					
Commercial sector	17.2	15.8	17.2	13.4	-3.8
Agriculture, fishing and trapping	F	F	F	F	F
Forestry and mining	F	F	F	F	F
Construction	F	F	F	F	F
Manufacturing	32.5	28.3	31.2	21.0	-11.5
Distributive services	32.0	37.0	36.5	30.6	-1.4
Business services	5.3	7.7	8.2	6.5	1.2
Consumer services	11.3	9.9	11.5	10.0	-1.3
Public services	59.5	58.8	59.6	59.8	0.3

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

Note: Comparable industry categories are only available for the years 1981 to 1998, so analysis is limited to this period.



**Table 3: Unionization rate by province and sector**

	1981	1986	1989	1998	2001	2004	1981-2004
	%						Change
<b>Total</b>							
Newfoundland and Labrador	45.2	43.5	41.7	39.7	40.6	39.1	-6.1
Prince Edward Island	38.0	29.2	31.6	26.3	28.1	30.1	-8.0
Nova Scotia	33.8	31.9	34.2	28.9	27.2	27.4	-6.4
New Brunswick	39.8	34.3	35.4	26.6	28.8	28.8	-11.0
Quebec	44.2	43.0	40.8	35.7	36.3	37.4	-6.8
Ontario	33.7	32.6	32.8	28.0	26.4	27.3	-6.4
Manitoba	37.9	36.0	37.9	34.9	35.7	35.4	-2.5
Saskatchewan	37.9	34.9	36.8	33.6	35.5	35.2	-2.6
Alberta	28.4	28.5	30.1	23.0	22.9	21.7	-6.7
British Columbia	43.3	40.2	39.1	34.8	33.7	33.1	-10.3
<b>Commercial sector</b>							
Newfoundland and Labrador	37.4	31.5	30.5	24.1	27.1	25.9	-11.4
Prince Edward Island	22.5	14.6	16.7	9.9	11.4	12.8	-9.7
Nova Scotia	23.7	21.7	24.2	16.1	14.9	12.6	-11.1
New Brunswick	29.4	22.5	24.2	13.9	16.9	15.6	-13.7
Quebec	34.7	32.7	32.1	23.8	25.6	26.5	-8.3
Ontario	27.9	25.9	24.9	19.6	18.0	18.0	-9.9
Manitoba	28.8	24.5	26.4	22.4	23.2	22.1	-6.7
Saskatchewan	26.3	21.5	24.4	19.3	21.8	20.8	-5.5
Alberta	19.8	16.0	18.3	13.3	13.2	12.2	-7.6
British Columbia	36.4	32.3	30.7	23.8	22.6	21.9	-14.5

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

among part-time workers throughout the reference period. However, full-timers saw their rates decline the most—13 percentage points for men and 5 points for women (Tables 4 and 5). This was partly due to the large share of full-timers employed in goods-producing industries, where rates fell heavily. A related factor was the large share of part-timers in consumer and business services, where rates were quite stable.

Among women in the commercial sector, unionization rates for full-time and part-time workers had almost converged by 2004, at 14% and 13% respectively. At the same time, the gap between full- and part-time men narrowed considerably.

As for job tenure, large changes were evident among workers who had held their job for one year or less. In particular, men with this short tenure witnessed a drop of 18 points, compared with 11 points for men holding jobs for more than one year. One explanation for this pattern is that young men entering the labour force during the period were less likely to find jobs in manufacturing and more likely to find them in consumer services. As a result, new hires were less and less likely to find employment in unionized workplaces.<sup>1</sup> This trend was not evident among women with short job tenure, presumably because they have long found jobs in the less unionized service industries.

Finally, trends in unionization varied by education, occupation and earnings. Men in blue-collar jobs (construction trades, transportation and equipment operation, and occupations unique to processing, manufacturing, and primary industry) saw the largest declines. This is consistent with the large declines in goods-producing and distributing industries. Furthermore, declines were larger among men who had not completed a university degree than among those who had.

Among both women and men, declines in unionization were greatest among workers earning \$15.00 to \$19.99 per hour.

### Possible reasons for change

Since 1981, the characteristics of workers and the labour force have changed in ways that may tend to reduce the union presence, especially for men.

Results from a decomposition analysis show that for men, almost half of the 11 percentage-point decrease in unionization between 1981 and 1998 was attributable to compositional changes in employment—particularly their increased concentration in industries and occupations with typically low unionization rates (Table 6).<sup>2</sup> For example, in the commercial sector, the proportion of male workers with a university degree increased, as did the proportions in managerial and professional occupations and in service industries. In general, unionization among these male workers is low.<sup>3</sup> Among young men (25 to 34), such compositional changes explained about 45% of the decline in unionization. Among those aged 45 to 64, these changes explained virtually all of it.



**Table 4: Unionization rate among men in the commercial sector**

	1981	1986	1989	1998	2001	2004	1981-2004
	%						Change
<b>Age</b>	37.2	34.2	33.6	25.3	25.2	24.5	-12.7
17 to 44	35.0	31.0	30.7	21.4	21.2	20.1	-14.9
17 to 24	27.6	17.4	18.7	11.3	12.8	13.6	-14.0
25 to 34	37.8	33.8	32.6	19.4	19.7	18.2	-19.6
35 to 44	39.7	39.2	38.4	29.7	28.1	26.4	-13.3
45 to 64	43.8	44.4	43.1	36.6	35.4	34.2	-9.5
45 to 54	43.3	42.7	42.5	37.5	37.1	35.2	-8.1
55 to 64	44.4	46.9	44.1	34.4	31.1	32.2	-12.3
<b>Hours of work</b>							
Full-time	38.5	35.6	34.7	26.5	26.1	25.4	-13.1
Part-time	16.6	13.6	19.4	12.0	15.7	15.5	-1.1
<b>Job tenure</b>							
One year or less	31.4	21.9	21.7	11.9	13.2	13.0	-18.4
More than one year	38.9	37.2	36.9	29.8	29.3	28.2	-10.7
<b>University graduate</b>							
Yes	14.9	13.7	14.6	8.7	9.8	10.6	-4.3
No	39.4	36.6	36.2	28.0	27.9	27.1	-12.2
<b>Hourly wage (2001 dollars)</b>							
Less than \$10.00	17.6	7.6	11.3	7.7	10.0	10.4	-7.1
\$10.00 to \$14.99	28.9	23.1	23.8	17.6	18.2	18.5	-10.4
\$15.00 to \$19.99	46.8	46.4	42.1	32.9	30.3	31.4	-15.4
\$20.00 to \$24.99	52.1	59.5	51.3	43.3	39.7	40.0	-12.1
\$25.00 and over	39.9	36.8	38.8	27.9	28.5	28.3	-11.6
<b>Occupation*</b>							
Professionals and managers	8.1	7.8	9.3	5.8	..	..	-2.4
Natural and social sciences	20.0	17.7	17.4	13.6	..	..	-6.4
Clerical	41.0	42.2	37.0	31.2	..	..	-9.8
Sales	12.6	12.7	10.6	8.8	..	..	-3.9
Services	21.3	20.0	21.1	15.7	..	..	-5.6
Primary and processing	49.0	46.3	44.5	35.6	..	..	-13.4
Construction	52.4	52.3	49.8	42.2	..	..	-10.1
Other	49.9	43.8	43.4	34.0	..	..	-15.9

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

\* Change for this category is 1981-1998.

Among young women, changes in the composition of employment accounted for about two-thirds of the 10-point drop in unionization. Changes in industry were most important, explaining about one-third of it. Among those aged 45 to 64, compositional changes accounted for just over half of the increase in unionization. Once again, changes by industry were by far the most important, particularly the increasing share of older women in public services.<sup>4</sup>

Nevertheless, about one-half of the overall decline in unionization for men remains unexplained. The same is true for between 35% and 55% of the decline among

younger men and women, and for slightly less than half of the increase among older women.

Some of the unexplained components may be due to changes in other characteristics of employment that could not be taken into account. For example, information on unionization by firm size was not available. However, the proportion of employees working in firms with less than 100 employees increased from 36% to 41% between 1983 and 2001. Because unionization is less prevalent in small firms, the increased number of workers would have exerted downward pressure on unionization rates.

**Table 5: Unionization rate among women in the commercial sector**

	1981	1986	1989	1998	2001	2004	1981-2004
	%						Change
<b>Age</b>	17.2	15.8	17.2	13.4	12.9	13.7	-3.4
17 to 44	16.8	15.2	17.1	12.5	11.6	11.9	-4.9
17 to 24	14.8	9.4	10.9	8.4	9.2	8.0	-6.8
25 to 34	16.6	18.6	18.7	11.5	10.6	11.8	-4.7
35 to 44	20.3	17.4	21.6	16.6	14.3	15.3	-5.0
45 to 64	18.3	18.0	17.5	16.3	16.8	18.2	-0.1
45 to 54	18.0	18.3	17.2	16.3	16.4	18.8	0.8
55 to 64	18.8	17.2	18.2	16.2	18.3	16.7	-2.2
<b>Hours of work</b>							
Full-time	19.3	17.1	19.0	14.1	13.0	14.1	-5.1
Part-time	9.5	11.7	11.8	11.4	12.7	12.5	3.0
<b>Job tenure</b>							
One year or less	11.4	9.3	11.8	6.6	6.4	7.5	-3.9
More than one year	18.9	17.6	18.9	16.1	15.5	15.8	-3.1
<b>University graduate</b>							
Yes	9.3	14.0	13.4	9.0	9.7	9.9	0.5
No	17.5	15.9	17.6	14.0	13.5	14.4	-3.1
<b>Hourly wage (2001 dollars)</b>							
Less than \$10.00	9.7	6.1	9.2	7.2	8.2	7.7	-2.0
\$10.00 to \$14.99	19.1	17.9	17.5	15.0	12.7	14.8	-4.3
\$15.00 to \$19.99	28.5	29.4	29.1	20.3	19.5	21.5	-7.0
\$20.00 to \$24.99	27.8	37.8	37.3	26.0	19.9	22.0	-5.8
\$25.00 and over	12.9	18.3	15.8	11.3	12.8	15.6	2.8
<b>Occupation*</b>							
Professionals and managers	5.0	5.5	5.9	5.7	..	..	0.6
Natural and social sciences	13.9	12.4	16.9	10.7	..	..	-3.1
Clerical	16.4	16.6	18.2	16.4	..	..	0.0
Sales	5.9	8.6	8.1	6.8	..	..	0.8
Services	11.2	12.5	13.1	10.1	..	..	-1.1
Primary and processing	38.3	33.1	40.4	26.7	..	..	-11.6
Construction	32.8	23.7	29.5	22.7	..	..	-10.1
Other							

Sources: Survey of Work History, 1981; Labour Market Activity Survey, 1986 and 1989; Labour Force Survey, 1998, 2001 and 2004

\* Change for this category is 1981-1998

In addition to compositional changes in the workforce, analysts have offered other possible explanations for declining union participation. A reduction in employee need for union representation is one possibility, as the demand for a voice is met through means such as joint labour-management committees or employee involvement initiatives. Increased management opposition to unionization is another possibility. Assessment of these explanations is beyond the scope of this article.

### Implications for earnings and pension coverage

Three broad trends in unionization have emerged since the early 1980s. First, unionization rates for men and women have converged. In the overall labour force, the difference declined from 11 percentage points in 1981 to less than one point in 2004, and in the commercial sector, from 20 to 11 points (Table 1).

**Table 6: Sources of changes in unionization, 1981-1998**

	Men			Women		
	17 to 64	25 to 34	45 to 64	17 to 64	25 to 34	45 to 64
	%					
<b>a) Change in unionization</b>	-10.5	-18.5	-4.0	-1.6	-9.5	7.2
Portion explained by compositional changes						
Industry	-2.5	-5.7	-0.6	0.3	-3.4	2.7
Occupation	-1.5	-1.4	-1.8	-1.0	-1.5	0.7
Part-time status	-0.3	-0.2	-0.2	-0.4	-0.1	0.3
Region	-0.1	-0.2	0.0	0.1	-0.1	0.5
Tenure (% of new employees)	-0.3	-0.5	0.0	0.0	-0.3	0.6
Education	-0.3	-0.3	-1.5	-0.3	-0.7	-0.6
<b>b) Total explained*</b>	-5.0	-8.4	-4.2	-1.4	-6.2	4.0
	[-4.7]	[-7.3]	[-2.9]	[-0.9]	[-4.1]	[4.9]
<b>c) Total unexplained (a - b)</b>	-5.5	-10.1	0.2	-0.2	-3.3	3.2

Sources: Authors' calculations from the Survey of Work History, 1981 and the Labour Force Survey, 1998

\* The sum of individual components may not add to the total explained due to rounding. The numbers refer to the portion of the change in unionization explained by changes in the composition of employment under the assumption that workers had the same propensity to be unionized in 1998 as they had in 1981. The numbers in brackets refer to the total change in unionization rate explained by changes in the composition of employment under the assumption that workers had the 1998 propensity in both 1981 and 1998.

Second, unionization rates for younger and older workers have diverged. Overall, the difference between men aged 17 to 44 and those 45 to 64 increased from 8 to 16 points. For women in these age groups, the difference increased from 1 to 14 points.

And third, unionization rates for commercial-sector and public-service workers have diverged since 1981. The difference increased from 27 to 38 percentage points for men, and from 42 to 47 points for women.

These trends have important implications for earnings and pension coverage. First, the convergence in unionization between men and women may have tended to nar-

row the wage gap between them. Conversely, the diverging trends observed between younger and older workers may have helped widen wage differences between these two, a pattern that many previous studies have documented.

Furthermore, the drop in unionization rates among men aged 25 to 34 between 1981 and 1998 explains a portion of their decline in wages—10% on average over the period. Multivariate analyses reveal that about one-fifth of the decline is due to reduced union coverage.<sup>5</sup>

Declining unionization also has implications for pension coverage. Between 1986 and 1997, pension coverage among men aged 25 to 34 declined by 8 percentage points,

with almost 60% attributable to declining unionization.<sup>6</sup> Declining unionization was also an important factor underlying the slight drop in pension coverage for similar-aged women during the period.

## Perspectives

### Notes

1 The decline in unionization among commercial-sector workers with short job tenure may also reflect an increase in the share of such employment taken up by temporary jobs, such as seasonal, term or casual. However, this is impossible to assess since information on temporary or permanent job status is not available for the reference period.

2 The decomposition is limited to the 1981-1998 period because comparable industry and occupation codes do not exist after 1998. For both 1981 and 1998, the union indicator was regressed on the following set of explanatory variables: industry (48-50 categories), occupation (8 categories), part-time status, province, an indicator of one year's seniority or less, and education (2 categories). Oaxaca decompositions were then applied to these regressions. Separate models were estimated for each of the six age-sex combinations shown in Table 6.

3 These calculations assume that the propensity to be unionized in 1998 was the same as in 1981. An alternative would be to examine the effect of changes in the composition of employment assuming that workers have the propensity to be unionized that they had in 1998. Using this alternative, the changes explain almost 5 of the 11 percentage-point decline in the unionization rate of male employees aged 17 to 64.

4 The share of employed women aged 45 to 64 in public services increased from 36.4% to 46.0% between 1981 and 1998.



5 For both years, log hourly wages of men aged 25 to 34 were regressed on the explanatory variables education (2 categories), part-time status, seniority, seniority squared, union status, industry (50 categories), occupation (8 categories), and province. Oaxaca decompositions were then applied to the regressions. A similar conclusion was obtained using two other regressions: The first pooled data for the years 1981, 1986-1990, and 1997-1998 and included a vector of year effects as well as the explanatory variables, excluding union status. The second added union status. Adding union status helps account for about one-fifth of the observed 10% decline in young men's wages between 1981 and 1998.

6 For more information, see Morissette and Drolet (2001).

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# Escaping low earnings

René Morissette and Xuelin Zhang

**L**ow-paid work can be a stepping stone toward a better-paying position. However, concern has been expressed that some workers may remain in low-paying jobs for several years. Prolonged periods of low earnings can put individuals at risk of social exclusion, limit their capacity to buffer income losses or unexpected expenses, and restrict their ability to become economically self-sufficient. Without the necessary resources, they may delay getting married, starting a family, or buying a home. For these reasons, the upward mobility (or lack thereof) of low earners attracts considerable attention.

The 1990s saw substantial changes to social assistance and Employment Insurance. An implicit goal of these reforms was to give workers with a marginal attachment to the labour market (many of them low earners) a stronger incentive to find work. The hope was that they would find a job, retain it, and eventually become economically self-sufficient. However, these institutional changes took place in a period when the earnings of many low skilled workers were falling.<sup>1</sup> Such workers may have found themselves in the predicament of having low earnings with little chance of escaping. On the other hand, the rise in educational attainment may have increased their chances of moving to higher wages.

Using the Longitudinal Worker File (LWF) and the Longitudinal Administrative Databank (LAD), this article traces employees' chances of escaping low earnings between 1983 and 2000 (see *Data sources and definitions*). While other studies have documented this issue during the early 1990s (Drolet and Morissette 1998) and the late 1990s (Janz 2004), none have examined the last two decades as a whole.<sup>2</sup> Similarly, little is known about the degree to which workers fall back

into low earnings. The study takes advantage of the long time period covered by the LWF and the LAD to investigate these issues. The upward mobility of low earners is analyzed over several four-year periods, allowing a comparison of two periods characterized by similar labour market conditions: 1985 to 1989 and 1996 to 2000.

The study does not account for individuals who may be able to offset their low earnings through self-employment. However, self-employment is not an

**Table 1: Educational attainment and employment patterns of low earners aged 25 to 50**

	Low earners*		Other workers	
	1986	1996	1986	1996
<b>Educational attainment</b>	%			
<b>Men</b>				
Less than high school	39.7	29.0	25.9	17.3
High school	15.4	23.6	16.9	23.1
Postsecondary education	34.1	34.0	39.0	38.2
University degree	10.8	13.4	18.3	21.4
<b>Women</b>				
Less than high school	35.5	22.6	17.5	9.6
High school	20.1	25.9	19.5	21.7
Postsecondary education	35.5	38.9	41.4	41.5
University degree	8.8	12.7	21.2	27.1
<b>Employment patterns</b>				
<b>Men</b>				
Full-year, full-time	31.3	36.1	86.5	87.0
Full-year, part-time	3.8	5.5	0.9	0.7
Part-year, full-time	52.0	45.0	11.5	11.6
Part-year, part-time	13.0	13.4	1.0	0.7
<b>Women</b>				
Full-year, full-time	27.0	31.5	83.0	82.6
Full-year, part-time	16.4	17.3	6.0	6.2
Part-year, full-time	29.9	27.0	8.7	8.8
Part-year, part-time	26.6	24.2	2.4	2.3

Source: Census of Population

\* Workers receiving less than \$23,551 (2001 dollars).

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## Data sources and definitions

The **Longitudinal Worker File (LWF)** is a 10% random sample of all Canadian workers. It integrates data from four sources: the Record of Employment (ROE) files of Human Resources and Skills Development Canada, the T1 and T4 files of the Canada Revenue Agency, and the Longitudinal Employment Analysis Program (LEAP) file of Statistics Canada. (LEAP is a longitudinal file on Canadian businesses at the company level.)

The **Longitudinal Administrative Databank (LAD)** is a longitudinal sample of taxfilers beginning with 1982 derived from the annual tax file provided by the Canada Revenue Agency. It contains a wide variety of income and demographic variables.

The LWF records person-job-years. An employee (the self-employed are excluded) holding five jobs in a given year contributes five observations. The LWF includes information on age, sex, province of residence, annual earnings, employer, industry, firm size, reason for separation when applicable, and whether the separation is permanent or temporary.<sup>3</sup>

Both the LWF and the LAD can provide data on transitions into and out of low earnings over the last two decades. Both have three important strengths. First, their measure of earnings is based on tax records and thus is quite accurate. Second, they have very large samples, and third, they cover long time periods—currently, 1983 to 2000 for the LWF and 1982 to 2002 for the LAD.

But both files have some limitations for the analysis of *trends* in mobility. With the introduction of the federal sales tax credit in 1986 and the goods and services tax credit in 1990, the proportion of individuals filing T1 tax forms changed. Being based on T1 tax forms, the LAD exhibits variation in the percentage of taxfilers with low earnings (Beach and Finnie 1998). Specifically, it likely captured more low earners after 1986 than it did previously, thereby affecting the comparability of derived mobility patterns. Because it collects annual wages and salaries from T4 files, the LWF does not share this problem. However, it contains no edits to deal with individuals who change social insurance numbers (SINs) or have multiple SINs. This may affect the estimates of upward or downward mobility since such individuals are two (or more) distinct workers in the LWF.<sup>4</sup>

Since neither data set produces perfectly consistent mobility patterns, this article uses both to document transitions into and out of low earnings over the last two decades. Most trends seen in the LWF are also seen in the LAD.

Because the LWF contains no information about income from self-employment, it does not allow an analysis of mobility based on all sources of labour market income. However, it can be used to assess the extent to which workers can escape low earnings through *paid employment*—that is, through an increase in their annual wages and salaries. If technological change, growing competition within industries or from abroad, or outsourcing modify the behaviour of employers in a way that limits the growth of well-paid jobs domestically, opportunities associated with paid employment will decline and chances of escaping low earnings through paid employment will likely fall.

The two-step procedure outlined in Morissette and Bérubé (1996, Appendix 1) was used to select a sample from the LWF that is consistent over time. First, jobs with annual wages and salaries less than \$250 in 1975 dollars were excluded. (In current dollars, the resulting thresholds equalled \$501 in 1983, \$645 in 1989 and \$843 in 2001.) Annual wages were then derived by summing earnings from all other jobs held in a given year. Thus, earnings were made up of annual wages and salaries from jobs paying at least \$843 in 2001 dollars. From the LAD, then, only individuals with annual wages and salaries of at least \$843 in 2001 dollars were selected.

The analysis was restricted to employees aged 25 to 50. Individuals under 25 were excluded because many of them had not yet completed the transition from school to work, and because the LWF contains no information to identify full-time students. The main interest is to document mobility patterns prior to retirement. Therefore, those over 50 were also excluded because much of the analysis uses transition probabilities over four-year periods. At the end of a period, these individuals would be 55 or older, and neither file can distinguish those who take early retirement.

**Earnings** are annual wages and salaries and exclude income from self-employment. Workers have low earnings if their annual wages and salaries in year  $t$  are less than \$23,551 annually in 2001 dollars. This corresponds to the before-tax low-income cutoff (LICO) for a family of two living in an urban area of at least half a million. Individuals with low earnings in year  $t$  were coded as having escaped low earnings by year  $t+4$  if annual wages and salaries in  $t+4$  were at least 10% higher than the 2001 LICO. The 10% buffer was used to avoid including marginal transitions out of low-paid work. Workers with low annual wages and salaries in year  $t$  who moved into self-employment in year  $t+4$  are considered as not having escaped low earnings through paid employment, even though their self-employment income in year  $t+4$  may have enabled them to exceed the low earnings threshold.

option for many workers, who may lack the necessary entrepreneurial skills, face borrowing constraints, or view self-employment as stressful or risky. Therefore, the question of whether today's workers are less likely than past workers to move out of low earnings solely through paid employment remains important. As

noted, a decrease in chances of escaping low earnings makes for financial vulnerability in the event of job loss or unexpected expenses—not to mention raising more fundamental questions of well-being and getting on with life, including marrying, having children, or buying a house.



## Trends in upward mobility, 1985 to 2000

Arguably, one would expect low earners to display more precarious employment patterns than other workers. Indeed, compared with higher earning employees, those with low earnings are employed full year full time much less often.<sup>5</sup> During the mid-1990s, about one-third of low earners were employed full year full time—less than half the rates observed among other workers (Table 1).

The last two decades have witnessed substantial increases in educational attainment among the workforce. Education levels rose for both low earners and higher earners. In 1986, fully 40% of male low earners had no high school diploma. By 1996, the proportion had dropped to 29%. Similarly, female low earners were much better educated in the mid-1990s than in the mid-1980s.

Since chances of moving out of low-paid work rise with education (Janz 2004), the growth in educational attainment should have increased chances of escaping low earnings between the mid-1980s and the mid-1990s. But, was this in fact the case?

For men aged 30 or more, the answer is clearly no. For them, chances of moving out of low earnings were never markedly higher between 1996 and 2000 than between 1985 and 1989, two periods when the unemployment rate of men aged 25 to 54 averaged 7.3% (Chart A). For instance, 45% of male low earners aged 30 to 34 moved out of low earnings between 1985 and 1989. For the 1996-2000 period, the proportion did not change appreciably. Among men 25 to 29, chances of escaping low earnings improved slightly.

Among women with low earnings, only those 25 to 29 enjoyed a substantial increase in upward mobility. Their chances of escaping low earnings rose by about 6 percentage points between 1985-1989 and 1996-2000. Older women moved up marginally.<sup>6</sup>

Hence, despite their greater educational attainment, low-paid men were generally no more likely to escape low earnings in the mid-

1990s than in the mid-1980s. The implication is clear: Upward mobility of low-paid men must have fallen, at least for some educational groups.<sup>7</sup>

While workers' chances of escaping low earnings generally did not increase between the 1980s and the 1990s, perhaps those who escaped low earnings in the 1990s enjoyed greater earnings growth than their counterparts in the 1980s. The data do not support this view. Even though the employment income of those who moved out of low earnings grew substantially over a four-year period—generally by \$20,000 or more—the growth during the second half of the 1990s did not surpass that in the second half of the 1980s (Table 2). Again, women 25 to 29 are the exception: Those who escaped low earnings between 1996 and 2000 saw their earnings rise by about \$22,000—about \$2,000 more than their counterparts between 1985 and 1989.<sup>8</sup>

## Factors associated with upward mobility

Between one-third and one-half of male workers with low earnings in a given year escaped the situation four years later. For women, the proportion varied between 15% and 35%. Chances of moving out of low earnings are procyclical—they drop in recessions and increase during expansionary periods (Chart A). But which workers are most likely to succeed in escaping?

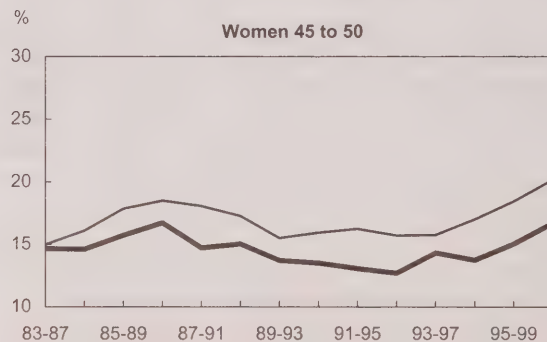
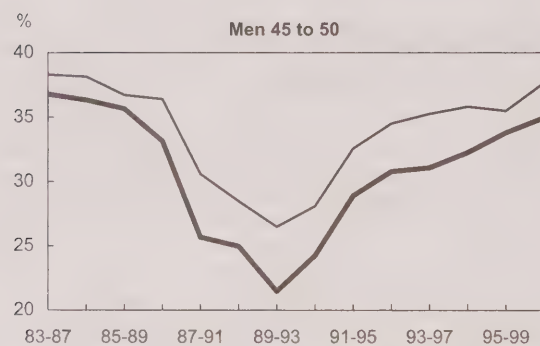
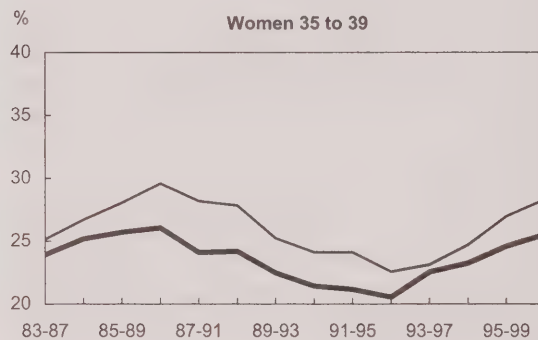
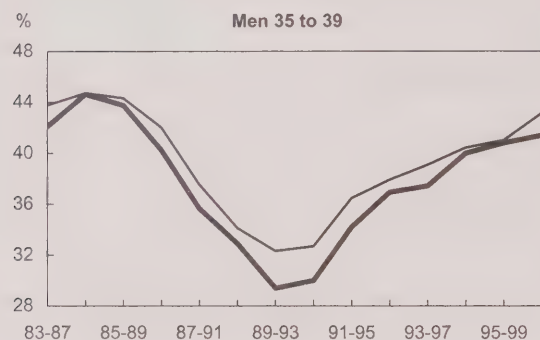
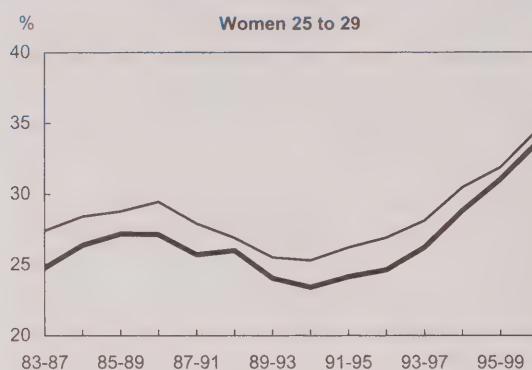
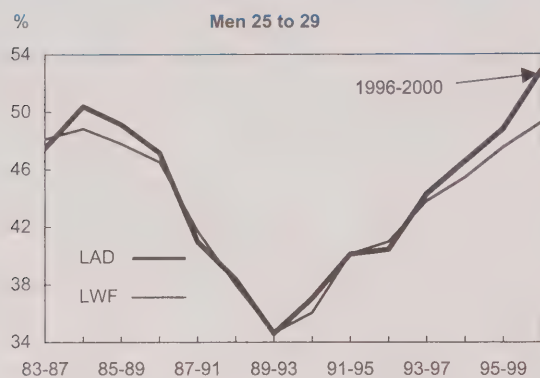
**Table 2: Median earnings growth\* of workers who escape low earnings**

	Age at beginning of period				
	25-29	30-34	35-39	40-44	45-50
<b>Men</b>					
1985-1989	25,100	25,600	25,900	25,800	25,100
1986-1990	25,400	25,500	26,200	25,600	24,900
1995-1999	24,400	24,000	24,200	24,100	23,800
1996-2000	25,300	24,500	24,300	24,500	24,400
<b>Women</b>					
1985-1989	19,800	20,000	20,000	18,800	17,300
1986-1990	19,900	20,000	19,500	19,200	17,500
1995-1999	21,500	20,100	19,500	18,800	17,100
1996-2000	22,200	20,800	20,300	19,400	18,100

Source: Longitudinal Worker File

\* Median value of the difference between annual earnings in year  $t+4$  and those in year  $t$  (2001 dollars).

Chart A: Upward mobility of low earners\*



Sources: Longitudinal Worker File, Longitudinal Administrative Databank

\* Workers with low (but positive) earnings in year  $t$  and positive earnings in year  $t+4$ .

In both the mid-1980s and the mid-1990s, young workers were much more likely than older ones to move out of low earnings. For instance, almost half of men aged 25 to 29 with low earnings in 1995 were no longer in that state in 1999. However, this was true for only 35% of those aged 45 to 50. The greater mobility of young workers no doubt reflects the faster wage growth common at the beginning of a career.

In all age groups, women were less likely than men to escape low earnings. This may reflect a number of factors. First, women receive lower wages. Second, they may be over-represented in occupations that offer little reward for experience. Third, some may be lone mothers reluctant to work more hours or change employers.<sup>9</sup>

In both periods, workers who stayed with their employer and those who changed employers had about the same chances of escaping low earnings—overall, slightly more than 40% for men (Table 3). However, the degree of success varied substantially within the two categories. Men or women who stayed with a large firm (500 or more employees) were almost twice as likely to escape low earnings as those who stayed with a small one (less than 20 employees). Among workers changing employers, those moving to a larger firm were much more likely to escape than those moving to a smaller firm—not surprising since large firms pay higher wages (Morissette 1993).

Chances of escaping low earnings also varied by industry. Half of male low earners who continued to work in manufacturing, distributive services, business services or public services managed to escape after

**Table 3: Upward mobility of low earners aged 25 to 50, by selected characteristics\***

	Men		Women	
	1985-89	1995-99	1985-89	1995-99
	%			
<b>All ages</b>	<b>45.0</b>	<b>42.7</b>	<b>26.6</b>	<b>26.5</b>
25 to 29	47.8	47.5	28.8	31.9
30 to 34	45.3	43.1	29.5	28.7
35 to 39	44.3	41.0	28.1	27.0
40 to 44	41.5	38.8	23.6	23.2
45 to 50	36.7	35.5	17.9	18.4
<b>Stayed with same employer</b>	<b>44.3</b>	<b>40.5</b>	<b>27.4</b>	<b>25.8</b>
Firm with 1 to 19 employees	32.9	29.4	16.4	15.0
Firm with 20 to 99 employees	46.2	39.9	21.7	19.5
Firm with 100 to 499 employees	48.5	47.0	26.3	28.2
Firm with 500 or more employees	55.4	53.3	35.0	35.3
<b>Changed employers</b>	<b>45.2</b>	<b>43.5</b>	<b>26.1</b>	<b>27.0</b>
Moved to a larger firm	54.2	51.9	30.3	31.0
Moved to a smaller firm	35.9	36.0	19.7	21.1
Stayed in same size class	43.1	40.7	26.6	27.0
<b>Stayed in same industry</b>	<b>45.2</b>	<b>41.9</b>	<b>26.7</b>	<b>25.9</b>
1. Primary and construction	40.5	39.8	21.1	22.4
2. Manufacturing	56.1	53.3	26.0	27.4
3. Distributive services	52.9	50.5	37.9	37.5
4. Business services	53.9	51.6	35.2	36.5
5. Consumer services	30.5	26.3	10.5	10.8
6. Public services	51.2	49.7	38.4	37.3
<b>Changed industries</b>	<b>44.9</b>	<b>44.0</b>	<b>26.3</b>	<b>28.0</b>
From 1-5 to 6	54.3	54.2	40.3	39.3
From 1-2 to 6	47.8	48.0	30.3	28.2
From 5 to 6	49.6	47.9	29.9	28.7
From 5 to 3-4	46.6	44.7	25.1	27.2
From 1-2 to 3-4	45.9	43.4	28.2	30.3
From 2 to 3-4	49.1	45.7	30.0	29.9
From 1-4 to 5	30.7	27.6	13.3	14.5
<b>Type of separation</b>				
Permanent quit	46.4	46.8	25.6	28.0
Permanent layoff	37.2	36.8	16.0	20.4
Other permanent separation	47.2	43.7	27.8	27.0

Source: Longitudinal Worker File

\* The sample consists of workers who had low (but positive) earnings in year *t* and positive earnings in year *t*+4. The table shows what percentage of all workers with low earnings in year *t* escaped low earnings in year *t*+4.

four years. This is almost twice the rate of 26% among low-paid men in consumer services. Similarly, more than one-third of low-paid women who remained in distributive services, business services or public services moved up after four years. In contrast, only 11% in consumer services did so.

Among workers changing industries, those landing a new job in consumer services were much less likely to escape low earnings than others. This no doubt reflects the relatively low wages in this industry. In contrast, workers moving to public services from other industries were fairly successful.

Whether workers were permanently laid off or quit voluntarily also mattered. As might be expected, low earners who quit had a better chance of escaping low earnings.



## Falling back into low earnings

While a substantial proportion of workers escaped low earnings over the space of a four-year period, about one-quarter fell back during the next four years (Table 4). Not surprisingly, chances of falling back increase during recessionary periods. For example, of male low earners 25 to 50 who escaped low earnings between 1985 and 1989, 35% fell back at least once between 1990 and 1993, a period that includes the 1990-1992 recession. In contrast, only 24% of their counterparts who moved out of low earnings between 1992 and 1996 fell back between 1997 and 2000.<sup>10</sup>

Which workers are most likely to fall back into low earnings? To answer this question, separate multivariate analyses were done for men and women who escaped low earnings between 1992 and 1996.<sup>11</sup>

The chances vary by age. Men 35 or older who escaped low earnings between 1992 and 1996 were at least 1.2 times more likely than those aged 25 to 29 to fall back (Chart B). In contrast, women aged 30 to 44 were less likely to do so than those aged 25 to 29. Presumably, the relatively high risk experienced by women aged 25 to 29 (in 1992) is partly because some of them quit their job to go on maternity leave when they were aged 30 to 34—that is, between 1997 and 2000.

Chances also vary by firm size. Those employed in small firms were at least 1.2 times more likely than those in large firms to fall back. Part of the difference no doubt reflects greater permanent layoff and bankruptcy rates among small firms.

**Table 4: Repeat incidence of low earnings\***

	Age at beginning of period					
	25-50	25-29	30-34	35-39	40-44	45-50
<b>Men</b>	%					
1983-1987	28.2	25.2	26.6	29.9	33.4	36.3
1984-1988	31.3	27.4	31.3	33.1	36.3	41.1
1985-1989	34.7	30.9	33.6	37.9	40.7	43.3
1986-1990	32.3	29.0	30.7	36.3	38.9	38.6
1987-1991	29.3	25.2	29.0	33.9	35.0	37.8
1988-1992	26.8	22.9	25.3	30.9	29.7	41.6
1989-1993	24.6	22.6	23.9	26.1	28.2	29.8
1990-1994	25.1	23.0	23.4	28.0	26.6	33.6
1991-1995	24.9	22.4	26.1	27.1	25.2	28.1
1992-1996	23.5	21.3	23.1	22.9	26.8	28.9
1993-1997	23.1	19.9	24.2	25.1	24.1	26.5
1994-1998	23.2	19.1	24.5	25.4	26.2	26.1
<b>Women</b>						
1983-1987	30.4	34.7	27.9	29.2	26.7	31.1
1984-1988	30.7	34.6	29.1	26.2	29.9	34.4
1985-1989	30.9	35.6	29.8	26.6	26.7	35.9
1986-1990	30.5	37.2	28.3	24.6	28.9	31.2
1987-1991	28.0	34.6	26.0	23.7	24.8	27.4
1988-1992	29.0	35.3	26.4	23.2	29.1	29.9
1989-1993	27.5	36.3	23.7	21.6	24.8	29.9
1990-1994	29.6	35.6	28.3	25.1	27.3	30.4
1991-1995	29.1	35.0	27.3	26.0	26.6	28.2
1992-1996	26.9	35.6	22.3	20.8	26.7	27.8
1993-1997	26.6	31.5	26.3	22.5	23.4	28.3
1994-1998	27.0	35.1	23.6	22.3	23.2	30.2

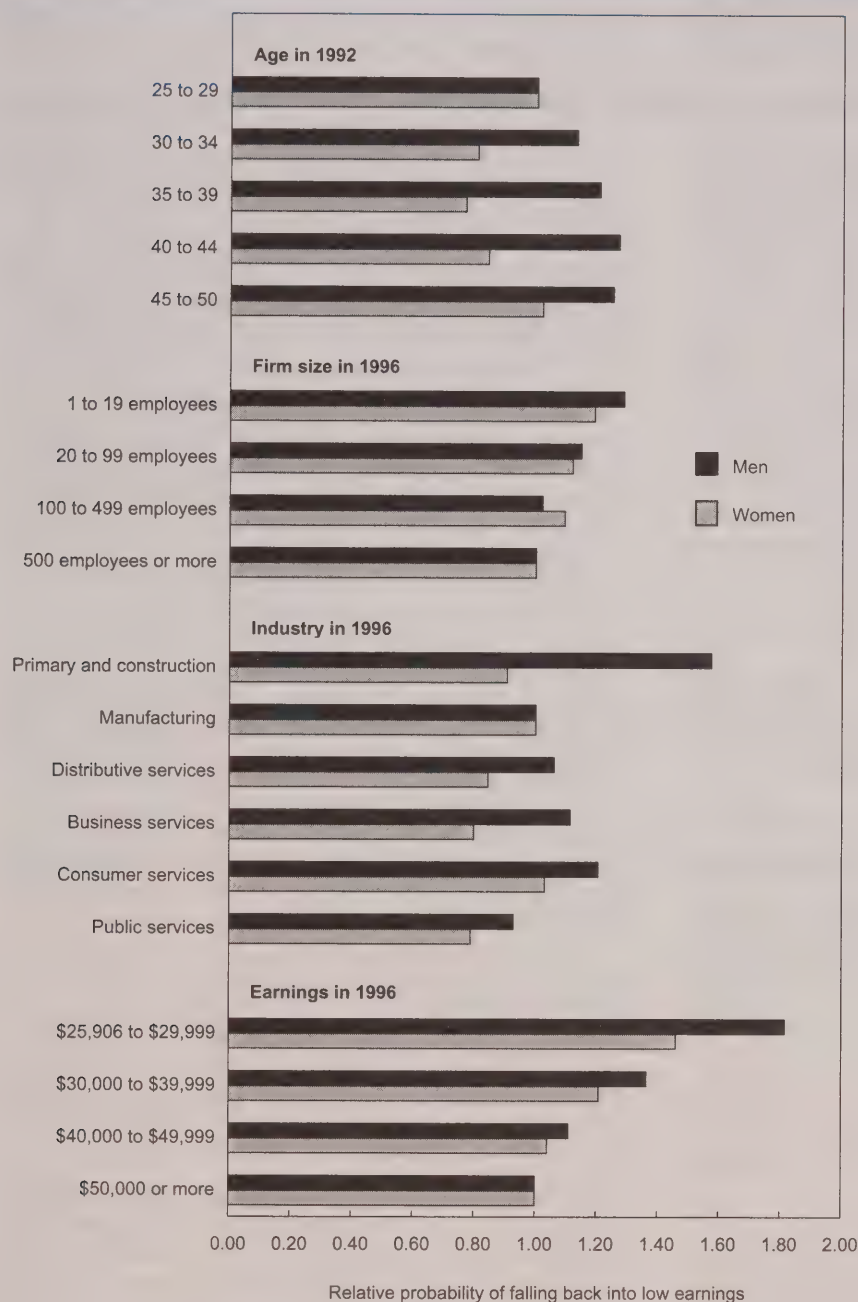
Source: Longitudinal Administrative Databank

\* The table shows what percentage of workers who escaped low earnings during a four-year period fell back during the next four-year period.

As expected, chances of returning to low earnings drop as employment income rises. Employees who escaped low earnings but earned less than \$30,000 in 1996 faced a much greater risk—at least 1.5 times—than those paid \$50,000 or more. Part of the difference may arise because young highly educated workers—many of whom may earn \$50,000 or more after having escaped low earnings—are less likely to be laid off than other workers, and therefore less likely to fall back into low earnings.

Even after controlling for age, firm size and earnings, important differences in the risk of falling back remained across industries, especially for men. They were 1.6 times more likely in primary industries and construction than in manufacturing to slide back into low earnings. Part of the difference likely reflects the relatively high seasonality of the construction industry and the associated high risks of temporary layoff. In contrast,

**Chart B: Relative probabilities of falling back into low earnings—workers escaping low earnings between 1992 and 1996.**



Source: Longitudinal Worker File  
 \* Reference group

persons employed in public services had lower chances than those in manufacturing of falling back into low earnings.

### Summary

Between one-third and half of men with low earnings in a given year had managed to escape four years later. For women, the proportions varied between 15% and 35%. Chances of escaping drop in recessions and increase during expansionary periods. More importantly, despite increasing educational attainment, low earners generally were no more likely to escape their situation in the 1990s than in the 1980s. Moreover, those who did escape generally did not experience greater earnings growth.

Workers most likely to move out of low earnings were young, worked in large firms, or changed employers and moved to a larger firm or to public services. In contrast, the chances were relatively small for those aged 45 to 50, working in small firms, or moving to a smaller firm or to consumer services.

Not all who escaped remained above the low-earnings threshold. Even in expansionary periods, at least one-quarter of men and women who escaped low earnings during one four-year period fell back during the next period. Along with age and employment income, firm size and industry affect the chances of falling back into low earnings. At least 25% of low earners who moved up fell back, suggesting that many low earners experience substantial earnings instability.



## ■ Notes

1 Between 1990 and 2000, Canadian-born men aged 25 to 34 with a high school diploma and employed full time in the private sector saw their median weekly earnings drop 11%. For their female counterparts, the drop was 3%. These numbers come from the 1991 and 2001 Censuses of Population.

2 Morissette and Bérubé (1996) is the only previous Canadian attempt to examine trends in transitions out of low earnings. However, their analysis covers only the 1976-1992 period and thus does not allow a comparison of recent mobility patterns with those observed in the 1980s. In contrast, Beach and Finnie (1998) use the Longitudinal Administrative Databank to address a more general issue: the extent to which workers in various parts of the earnings distribution experienced upward or downward mobility during the 1982-1994 period. Using transition matrices, they provide descriptive evidence regarding workers' ability to cross various earnings thresholds over periods of either 6 or 12 years. Contrary to the aforementioned studies, their population at risk of moving up includes not only workers with relatively low earnings, but also middle-paid workers and those with fairly high earnings. They find that the probability of upward movement fell for men but rose for women between the 1980s and the early 1990s.

3 Age, sex and province of residence are drawn from T1 files. Annual wages and salaries come from T4 files. Reasons for separation come from ROE files. Industry, firm size and permanence of a job separation are from LEAP.

4 Beach and Finnie (1998) estimate that the problems with social insurance numbers affect roughly 4% of individuals in a given year.

5 Since the administrative data used in this article provide neither weeks worked nor hours worked per week, it is impossible to assess whether individuals escape low earnings by working more hours per week or more weeks per year, or by earning higher wages.

6 These conclusions hold in logistic regressions that include controls for age, age squared, province, earnings in year  $t$ , and a vector of period effects. The regressions were run separately for men and women in each age group.

7 An alternative view is that low-paid workers' chances of escaping low earnings would improve only if their educational attainment rose relative to other workers. However, since chances of escaping low earnings did not improve for

low-paid men, despite their rising educational attainment, upward mobility must have fallen within some educational categories.

8 Since neither the LAD nor the LWF contain information on workhours, it is impossible to assess the extent to which earnings growth is due to a shift from part-time to full-time work.

9 They may choose jobs that are close to home or school, part-time jobs with hours that coincide with children's school hours, or jobs that require relatively few hours but offer little opportunity for advancement.

10 Workers who fell back into low earnings were those whose annual wages and salaries were positive but less than \$23,551 (in 2001 dollars) at least once between year  $t+4$  and year  $t+8$ .

11 Separate logistic regressions were run for these men and women. The dependent variable equals 1 if workers fall back into low earnings at least once between 1997 and 2000, 0 otherwise. The explanatory variables are shown in Chart B. The relative probabilities for a given group of variables (for example, age in 1992) are computed by setting all other explanatory variables to their mean values.

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# Business support services

Ernest B. Akyeampong

**T**he business support services industry, a major component of which is believed to consist of telephone call centres, has been one of the fastest growing industries in Canada over the past two decades (see *Data source and definitions*). Its phenomenal growth—from a mere 20,000 employees in 1987 to 112,000 in 2004—can be attributed to several factors. These include the significant advances made in information and telecommunications technology, especially low-cost digital technology; growing proliferation of the computer and the Internet; increased telemarketing; and changes in business practices, including more outsourcing and contracting-out.

Two recent events related to telephone call centres have thrust the industry into the limelight. On the negative side, nuisance and privacy complaints from the public as a result of unwanted calls, especially at dinner time, have led to demands for legislation to limit such calls—as in the United States.<sup>1</sup> On the other hand, the industry's role in generating donations in response to the recent Asian tsunami disaster has served to enhance its image.<sup>2</sup> Another reason for interest in the industry is the perpetual good job versus bad job debate, and the contention that ongoing economic restructuring toward service-sector industries such as business support tends to favour faster growth of low-wage jobs.

Despite the role the industry plays in our private and business lives, as well as its recent prominence in public debates, statistical profiles of the industry's rapid growth and the characteristics of its workers and jobs have been rare.<sup>3</sup> As a result, public perceptions of the industry have been formed by and large around anecdotal evidence. Using the Labour Force Survey (LFS), this study provides statistical evidence to address these perceptions as well as to provide material for the good job versus bad job debate.

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## Facts about business support services

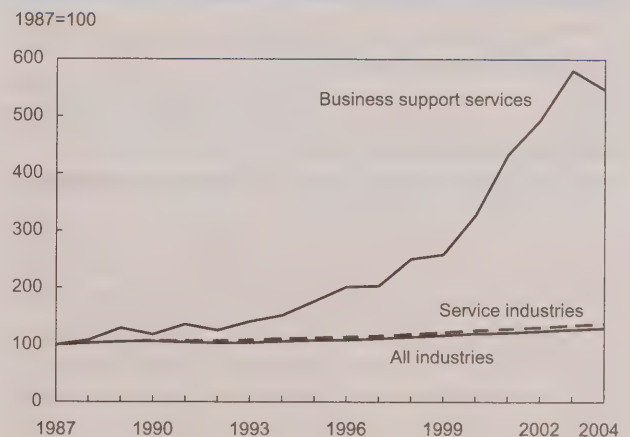
### Rapid employment growth

Between 1987 and 2004, employment in this industry increased more than fivefold (447%), from 20,000 to 112,000.<sup>4</sup> This far exceeded the 37% rise in all service industries (from 8.7 to 12.0 million) and the 29% rise (from 12.3 to 15.9 million) in overall employment (Chart A). The drop in the business support industry from 2003 to 2004, the first since 1992, occurred as overall employment and service-sector employment were rising. Could this indicate that employment in the business support industry has peaked? Perhaps, but the large decline (-7.8%) in 1992 was followed by an even larger increase (12.4%) the following year.

### Employment growth concentrated in Atlantic Canada

Technological advances have made it possible to locate business support offices in areas far from clients. It is no wonder then that many firms have found

**Chart A: Business support services outstripped overall employment growth.**



Source: Labour Force Survey, 1987 to 2004

**Table 1: Characteristics of workers**

	All industries	Business support services	Service sector
		'000	
<b>Employed</b>	<b>15,949.7</b>	<b>112.0</b>	<b>11,957.0</b>
		%	
<b>Both sexes</b>	100.0	100.0	100.0
Men	53.2	36.6	45.4
Women	46.8	63.4	54.6
<b>Age</b>	100.0	100.0	100.0
15 to 24	15.4	31.1	16.7
25 to 54	71.5	62.7	70.2
55 and over	13.1	6.2	13.1
<b>Education</b>	100.0	100.0	100.0
Less than grade 9	3.1	F	2.3
Some high school	11.2	7.5	10.2
High school graduate	20.3	25.1	19.1
Some postsecondary	10.0	16.9	10.5
Postsecondary certificate or diploma	34.1	33.5	33.5
University degree	21.2	16.5	24.5
<b>Job status</b>	100.0	100.0	100.0
Full-time	81.5	83.5	77.3
Part-time	18.5	16.5	22.7
<b>Student status, age 15-64</b>	100.0	100.0	100.0
Students	8.1	8.9	9.7
Full-time	5.5	6.0	6.8
Part-time	2.6	2.9	2.9
Non-student	91.9	91.1	90.3
<b>Job tenure</b>	100.0	100.0	100.0
1 to 12 months	20.8	40.2	21.6
1 to 5 years	31.8	44.7	33.1
5 to 10 years	16.9	8.9	16.6
10 to 20 years	17.9	4.4	17.6
Over 20 years	12.5	1.8	11.2
<b>Class of worker</b>	100.0	100.0	100.0
Employees	84.6	89.9	85.0
Self-employed including unpaid family worker	15.4	10.1	15.0
<b>Average hours, main job</b>			
Actual	33.3	31.2	31.7
Usual	36.5	35.2	35.0

Source: Labour Force Survey, 2004

it attractive to locate in areas with persistently higher unemployment.<sup>5</sup> In 2004, for example, about a quarter of all employment in the industry was in Atlantic Canada, notably Nova Scotia and New Brunswick. This compared with the region's 7% share of total employment in both the service-producing industries as a whole and in all industries combined (Chart B).

### Data source and definitions

The **Labour Force Survey (LFS)** is a monthly survey of over 52,000 households or 100,000 individuals, excluding persons in institutions, the Armed Forces, and the territories.

The **business support services industry** (NAICS 2002, code 5614), consists of establishments primarily engaged in providing services such as preparing documents (code 56141), operating telephone call centres (code 56142), operating business service centres (code 56143), collecting unpaid claims (code 56144), providing credit information (code 56145), and providing other business support (code 56149).

Because the LFS does not provide data below the 4-digit code level, it is not possible to obtain information for each of the six 5-digit industry sub-components. However, discussions with industry experts suggest that telephone call centres constitute the biggest industry sub-group under code 5614, and serve as a centre for all or most of the services listed at the 4-digit code level.

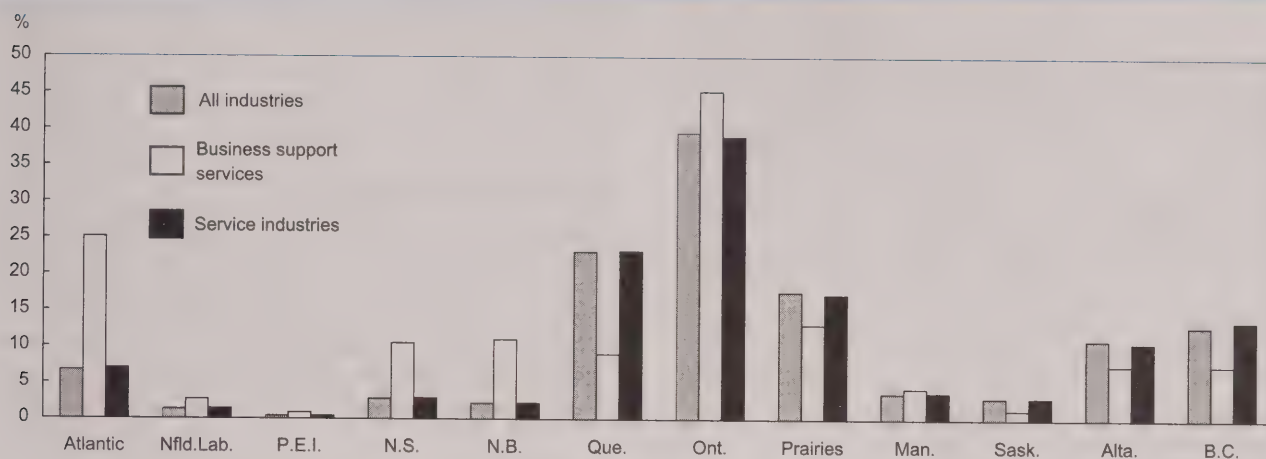
**Telephone call centres** are establishments primarily engaged in receiving and/or making telephone calls for others. These establishments are engaged in activities such as soliciting or providing information, promoting products or services, taking orders, and raising funds. This industry also includes establishments primarily engaged in answering telephone calls and relaying messages to clients, and establishments primarily engaged in providing voice mailbox services.

### Comparing LFS and census data

For both the LFS and the census, the most disaggregated industry data provided are at the 4-digit code level. Data from the two sources show similar employment counts and socio-demographic composition for the business support services industry. For example, the LFS estimated 2001 annual average employment in the industry at 88,000, compared with a 81,000 total in May 2001 from the census. Both the LFS and the census estimated women's share of the industry's employment at 63%. The two sources also estimate similar shares for several other variables including geographical, part-time versus full-time, and employee versus self-employment splits.

Close to half was located in Ontario, and only 9% in Quebec. Share gains in Atlantic Canada in recent years appear to have come at the expense of declines in Quebec, the Prairies and British Columbia. Between 1990 and 2004, Atlantic Canada's share rose from a mere 5% to 25%. Meanwhile, Quebec fell from 26% to 9%, the Prairies from 17% to 13%, and British Columbia from 11% to 8%.<sup>6</sup> Ontario's share remained above 40% throughout the period.



**Chart B: After Ontario, the Atlantic region had the largest share of business support employment.**

Source: Labour Force Survey, 2004

### Large workplaces

Business support workplaces tend to be larger than average. In 2004, about 65% of industry employees could be found in workplaces of 100 or more workers, much higher than the corresponding 31% found in all service industries or the 34% in all industries combined (Table 2).

### Women and youth over-represented

A disproportionately large share of jobs in the industry are held by women (63% in 2004), compared with the all-service-industry rate of 55% and the overall rate of 47% (Table 1). Youths (aged 15 to 24) made up almost one-third of jobholders in business support services—twice the rate found for all service industries (17%) and for all industries combined (15%).

### Low unionization

Only 5% of the industry's employees were unionized or had collective agreement coverage in 2004 (Table 2). The levels were almost seven times higher for employees in all service industries and in all industries combined (about 34% each).

### Generally low wages

In 2004, workers in the industry earned on average \$12.45 an hour, much less than the service sector average of \$18.10 and the overall average of \$18.50

(Table 2). Indeed, about 29% of business support workers earned less than \$10 an hour in 2004, much higher than the 22% for all service industries and 19% for all industries combined.

### Short job tenure

In 2004, 85% of workers had tenure of five years or less (Table 1). The comparable percentages were 55% for all service industries and 53% for all industries combined. Several factors are at work here, principally the relative youth of business support services. Also, the generally low wages likely contribute to high labour turnover.

### Myths about business support services

#### Less educated workers

Educational attainment among workers in the industry is similar to that found in all industries and in all service industries. In 2004, approximately 67% of all business support workers had some postsecondary education or higher. The comparable figures were 65% for workers in all industries and 69% for those in all service industries (Table 1). This is in line with the general increase in education levels among all workers and the growing demand for higher education irrespective of industry.



**Table 2: Characteristics of jobs**

	All industries	Business support services	Service sector
		'000	
<b>Employees</b>	<b>13,497.9</b>	<b>100.7</b>	<b>10,166.5</b>
		%	
<b>Union coverage</b>	100.0	100.0	100.0
Union member or covered by collective agreement	34.1	5.2	34.1
Non-unionized	65.9	94.8	65.9
<b>Job status</b>	100.0	100.0	100.0
Permanent	87.2	90.1	86.6
Temporary	12.8	9.9	13.4
<b>Firm size</b>	100.0	100.0	100.0
Under 20 employees	33.1	13.4	35.4
20 to 99 employees	32.9	21.8	33.9
100 to 500 employees	21.3	38.6	18.8
Over 500 employees	12.6	26.1	11.9
<b>Earnings</b>	100.0	100.0	100.0
\$0.01 to \$9.99	18.7	29.0	21.7
\$10.00 to \$13.99	19.1	47.2	19.1
\$14.00 to \$19.99	25.4	15.4	24.4
\$20.00 and over	36.8	8.4	34.9
<b>Average hourly earnings (\$)</b>	<b>18.50</b>	<b>12.45</b>	<b>18.10</b>

Source: Labour Force Survey, 2004

**Mostly part-time jobs**

The incidence of part-time work among business support workers (17% in 2004) was in fact slightly lower than that found among workers in all industries (19%) or in all service industries (23%) (Table 1). Indeed, average weekly hours actually worked in 2004 in business support services and in all service-producing industries were virtually identical, at around 31. The figure for all industries combined was only slightly higher, at 33.

**Mostly temporary jobs**

In fact, only 10% of business support workers held a temporary job in 2004 (Table 2). This was lower than the proportion found among workers in all industries or in all service industries (13% each).

**Students over-represented**

Although its youthful workforce could indicate a large student presence, the business support industry employs similar proportions of students as other industries (Table 1). Students accounted for only 9% of business support workers in 2004, about the same as for all service industries (10%) and for all industries (8%).

**Self-employment rare**

About 10% of all business support workers in 2004 were self-employed. The comparable proportions for workers in all industries and in all service industries that year were higher, at 15% each (Table 1). Since the LFS data cannot be disaggregated beyond the 4-digit level, it is impossible to ascertain the distribution of self-employment in the six industry subcomponents.

**Conclusion**

Technological advances and new modes of sales and service delivery underlie the phenomenal growth of employment in business support services over the past two decades. Furthermore, since these enterprises can operate at long distance from their customers, regions of the nation with high unemployment such as Atlantic Canada have particularly benefited.

Women and youth are over-represented in the industry, which has a low rate of unionization. Wages are generally low, despite respectable levels of education among the workers. Not surprisingly, turnover is relatively high.

The common perceptions that the industry has a relatively higher concentration of part-time and temporary jobs, a higher student-worker ratio, or a high concentration of less educated workers are not corroborated by the data.

The year 2004 marked the first employment drop since 1992 in an industry that has recorded spectacular annual job gains. Whether this is just a blip or a sign of peaking employment is still too early to tell.

**Perspectives**

## ■ Notes

1 Recent legislation in the United States offers households the option of being taken off the list of names and addresses used by telephone call centres. Contravention of the law invokes severe fines.

2 Telephone call centres were not the only players in soliciting funds for relief of the victims of the December 2004 tsunami. Others included various levels of governments; societies; and religious, charitable and advocacy groups. The Internet and the media were also widely used for fundraising.

3 In a 2000 study for the Status of Women, a case study approach was used to explore issues surrounding call centres. For more information see R. Buchanan and S. Koch-Schulte, *Gender on the Line: Technology, Restructuring and the Reorganization of Work in the Call Centre Industry*. Status of Women. September 2000.

4 The years 1987 and 2004 were chosen for this study for two reasons. The former marks the earliest year for which LFS NAICS 2002 data are available; and 2004, the latest year for which LFS data are available.

5 Indeed, to stem the flow of call-centre jobs to cheap, labour-abundant countries such as China, India, and Mexico, legislators in the United States are considering passing laws that will discourage American companies from setting up call centres in other countries.

6 It is not clear why Quebec's employment share is this low or why it has fallen over the years.

# Looking, and looking, for work

Vincent Dubé and Claude Dionne

In addition to providing an income, having a job is usually satisfying and rewarding. It also expands one's sphere of activity and in some cases is accompanied by social status. Long-term unemployment can be particularly hard because of its increased risk of financial or psychological consequences. From a public policy standpoint, then, having a clearer picture of the factors associated with long periods of unemployment is vital.

It is well-known that the time spent in unemployment during a year is not evenly distributed across the labour force. A large portion is concentrated within groups of people who look for work over long periods. A recent article shows that the groups most likely to be affected by prolonged unemployment were men, older workers, the less educated, and residents of Quebec and British Columbia (Dubé 2004).

Using a duration model based on a longitudinal sample from the Survey of Labour and Income Dynamics (SLID), this article investigates the factors influencing the chances<sup>1</sup> of finding a job for people who were unemployed for more than six consecutive months<sup>2</sup> in the late 1990s and early 2000s (see *Data source*).

A long-term unemployed person's chances of getting a job were notably influenced by several factors (Table).<sup>5</sup> Results for the short-term jobless (six months or less) and all unemployed (all durations combined) are included for comparison.<sup>6</sup>

## Persons with less chance of finding a job

### Older workers

Age had a significant effect on a long-term jobless person's chances of finding work. The youngest unemployed workers (aged 16 to 25) were 35% more

likely to find a job than those aged 26 to 45 (reference group). Conversely, the oldest unemployed (56 and over) were 39% less likely to find a job. These results echo the findings of a number of other Canadian studies showing that older workers have difficulty finding employment (Corak 1990; Crémieux et al. 1995; Wong, Henson and Roy 1999). Among the reasons often cited are possible discrimination and a preference by employers to train younger workers as an investment in the future.

### Social assistance beneficiaries

Long-term unemployed workers receiving social assistance benefits were 47% less likely to find work. While it may be tempting to attribute this to the program's existence, the relationship is by no means certain. In fact, the assurance of having a small income may make the unemployed more effective in their job search. Among other things, it allows them to dress appropriately, travel to job interviews, or move to where jobs are available. The divergence is better attributed to differences in personal characteristics between those who received social assistance and those who did not. Social assistance recipients may also have weaker ties to the labour market—that is, less optimism about their chances of finding a job, or fewer connections in the workplace.

Moreover, since program eligibility is associated with a person's financial situation, the longer the time between becoming unemployed and applying for social assistance, the longer the transition to employment is likely to be. Also, to avoid being penalized by the social assistance program, the jobless may be less likely to look for temporary or part-time employment, or to officially report it.

### Immigrants

Immigrants were 21% less likely to find employment. This is consistent with the perception that they experience greater difficulty in their job search. According to the Longitudinal Survey of Immigrants to Canada (2003), the main obstacles reported were lack of

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## Data source

The **Survey of Labour and Income Dynamics** provides longitudinal data on labour force activity for each month in a given year. Each January, information for the previous year is collected from some 70,000 people (35,000 per panel). Respondents remain in the survey for six years.

Estimates were weighted to make them representative of the Canadian population (excluding people living in the territories, on Indian reserves, on military bases or in institutions). Two samples were used. One was made up of respondents from January 1996 to December 1998, the other of respondents from January 1999 to December 2001.

The sample of long-term unemployed workers was formed using the first long-term unemployment spell. Analysis is based on unemployed workers and not the periods of unemployment. Hence, if a person had more than one unemployment spell during the observation period, only the first was used. Because it was impossible to obtain a precise measurement of the length of an unemployment spell already in progress when a person joined the sample (that is, before January 1996 for the first group and before January 1999 for the second group), such spells were excluded (left-censored). Students were removed from the sample because of their weaker attachment to the labour force.

The table below provides an overview of the final sample used in the model. A total of 2,538 individuals (unweighted figure) experienced an unemployment spell of seven months or more during the three-year observation period. Of that number, 1,536 were from the first panel and 1,002 from the second panel.

### Model used

A proportional hazard model (Cox partial likelihood method) was used to identify factors that might affect the distribution of unemployment spell durations. The model is based on a job search approach using a risk function, that is, the conditional chances that a person will find a job.<sup>3</sup>

The main advantage of this kind of model is that it takes into consideration the effect that the duration of the unemployment period has on the chances of exiting unemployment and takes right-censored values (that is, unemployment periods that continue beyond the end of the observation period) into account. Within the framework of this specification, the proportional effect that each variable has on the chances is estimated. Information in the table on the next page can be interpreted as the percentage change in the chances of finding a job for a unit variation in a given independent variable (explanatory variables).<sup>4</sup>

### Final sample

	All unemployed				Long-term unemployed			
	Sample*	Population**		Average duration†	Sample*	Population**		Average duration†
		'000	%	months		'000	%	months
<b>Total</b>	<b>7,544</b>	<b>3,051</b>	<b>100.0</b>	<b>5.6</b>	<b>2,538</b>	<b>1,016</b>	<b>100.0</b>	<b>11.5</b>
1996 to 1998	4,317	1,701	55.7	5.8	1,536	600	59.0	11.7
1999 to 2001	3,227	1,350	44.3	5.2	1,002	416	40.9	11.2

\* Unweighted figures.

\*\* Figures weighted to represent the Canadian population.

† Average duration of unemployment for those who found a job during the observation period.

experience in the Canadian labour market, difficulty in having foreign qualifications recognized, and lack of knowledge of either official language.

However, being an immigrant was not a factor for the short-term jobless. This may indicate a division among immigrants based on length of time in Canada. New immigrants may be among the long-term unemployed, with short-term unemployment more common among immigrants who have been living here for some time. The latter may have acquired labour market characteristics closer to those of the workforce as a whole.<sup>7</sup>

## Persons with more chance of finding work

### Employment Insurance recipients

The long-term jobless receiving Employment Insurance (EI) benefits had a 21% better chance of finding work than those not receiving benefits. The opposite was true for the short-term jobless and the entire unemployed group (which is heavily influenced by short-term unemployment).

**Table: Factors associated with the chances of finding a job**

	Short-term unemployed	Long-term unemployed	All unemployed
<b>Age</b>		%	
16 to 25	27	35	30
26 to 45 (reference group)	0	0	0
46 to 55	-16	n.s.	-15
56 and over	-48	-39	-46
Disability	-30	n.s.	-25
EI benefits	-18	21	-12
Social assistance benefits	-40	-47	-45
Principal household earner	14	16	15
Urban area*	n.s.	n.s.	n.s.
Immigrant	n.s.	-21 <sup>††</sup>	-15
Visible minority or Aboriginal	-15	n.s.	-15
Woman	-13	n.s.	-9
Experience**	24	n.s.	22
<b>Education</b>			
Less than high school	n.s.	n.s.	n.s.
High school diploma (reference group)	0	0	0
Postsecondary, non-university	13	n.s.	n.s.
University degree	27	n.s.	20
Presence of children	n.s.	n.s.	n.s.
Couple	n.s.	n.s.	n.s.
<b>Region</b>			
Atlantic	n.s.	n.s.	n.s.
Quebec	n.s.	n.s.	-11
Ontario (reference group)	0	0	0
Prairies	13	35	20
British Columbia	n.s.	n.s.	n.s.
Panel 2 (1999 to 2001) <sup>†</sup>	n.s.	n.s.	n.s.

Source: Survey of Labour and Income Dynamics, 1996 to 2001

\* 50,000 or more.

\*\* Two or more years labour market experience.

<sup>†</sup> Panel 1 is the reference group.

<sup>††</sup> This result is statistically significant at the 90% level, while other results are significant at the 95% level; n.s. = not significant.

The model does not refer to six consecutive years, but instead to two longitudinal panels of three years each that have been combined: Panel 1: 1996 to 1998; panel 2: 1999 to 2001.

As results indicate, the overall effect of EI on unemployment duration is difficult to interpret, largely because different factors may be acting in concert or at cross-purposes.

In particular, many of the short-term jobless are unemployed for a very short period (less than two months), making it not worthwhile to apply for EI. This may partly explain why people not receiving benefits had a greater chance of finding a job. Similarly, unemployed workers may tend to be from sectors with high turnover and more temporary jobs, so accumulating the hours required for EI eligibility may be more difficult.

The effect of EI on the chance of finding a job varies according to how long a person has been receiving benefits. For example, those who have been unemployed for only a few months and have just started receiving benefits may be less inclined to look for work than those whose benefits are running out.

In addition, because a person must accumulate a minimum number of work hours to be eligible for EI, recipients may have stronger ties to the labour market, making the job search easier. One reason this phenomenon is seen only with long-term unemployment could be that this group largely excludes seasonal unemployment and temporary jobs, which given their importance could bias the program's effects.

### **Primary breadwinners**

Being the primary earner in a household increased a long-term unemployed person's chances of finding a job by nearly 16%. People in this situation likely have more financial responsibilities and so are under more pressure to get a job.

### **Prairie residents**

The long-term jobless in the Prairie region were 35% more likely to find employment than those living



in Ontario (reference group). This is consistent with various labour market indicators for the period. For example, the Prairie region had the lowest unemployment rates and the lowest frequency of long-term unemployment in 2001 (figures not shown).<sup>8</sup>

### Factors among short-term unemployed

Almost all factors observed for the long-term unemployed were also observed for short-term unemployed. However additional factors influenced the latter's chances of finding a job.

The leading one was education level. People with a postsecondary, non-university education were 13% more likely to find a job than those with only a high school education (reference group); the percentage was 27% for those with a university education. This agrees with the idea that increasing human capital should boost the chances of finding work since, among other things, employers will assume a greater potential for productivity. One reason this factor is absent among the long-term unemployed is that those with higher education are more often concentrated in specific subject areas, making them less in demand in the labour market. It is also possible that they have higher expectations, which could reduce the chance of finding a job quickly.

Experience was another positive factor. People with at least two years' experience in the labour market had about a 24% better chance of finding employment. A work record may help lessen an employer's feeling of risk in hiring.

The presence of a disability also had an effect, in this case negative. Those with a disability were 30% less likely to find a job than those with no disabilities. This factor may tend to reduce available job offers (because of work limitations or hiring discrimination) and to make looking for work more difficult in the short term.

Finally, as employment equity programs show, women, visible minorities and Aboriginals had less chance of finding work than others in the short-term unemployed population. For example, unemployed women were 13% less likely to get a job, while Aboriginal persons and members of visible minorities were 15% less likely.<sup>9</sup>

### Conclusion

Several factors influenced the chances of long-term unemployed workers finding a job in the late 1990s and early 2000s. Those who were older or receiving social assistance had less chance of finding work. Conversely, chances were better for younger people, primary household maintainers, those receiving EI benefits, and those living in the Prairie region.

### Perspectives

#### ■ Notes

- 1 The appropriate technical term in the case of a proportional risk approach is the 'risk' of finding a job. However, to avoid any negative connotation, 'chance' is used in the article.
- 2 No real consensus exists in the literature on a definition of long-term unemployment. It is defined here as a period of more than six consecutive months to avoid potential distortions associated with frictional and seasonal unemployment. It also keeps the sample to a reasonable size—one preferable for econometric modelling. Moreover, this group of unemployed is of particular interest since their job search is likely a 'dominant' activity. For example, it would be rather odd for a person to spend more than six months looking for a job and then keep it for only two or three weeks.
- 3 This model can be expressed in the following form:

$$h_i(t) = \lambda_0(t) e^{(\beta_1 x_{i1} + \dots + \beta_k x_{ik})}$$

This function represents the chances an unemployed person  $i$  has of finding a job within time  $t$ . The hazard function is composed of two terms multiplied together: the reference risk, that is, the chances common to all individuals, and a linear function of  $k$  explanatory variables  $x_i$  associated with the estimated  $\beta$  coefficients as an exponential. In other words, the model establishes that the individual chances are the product of a common component and a component for each individual.

The Cox model is referred to as a proportional risk model because the ratios of the risk functions of two persons,  $i$  and  $j$ , are used:

$$\frac{h_i(t)}{h_j(t)} = \frac{\lambda_0(t) e^{(\beta_1 x_{i1} + \dots + \beta_k x_{ik})}}{\lambda_0(t) e^{(\beta_1 x_{j1} + \dots + \beta_k x_{jk})}}$$

or

$$\frac{h_i(t)}{h_j(t)} = e^{[\beta_1 (x_{i1} - x_{j1}) + \dots + \beta_k (x_{ik} - x_{jk})]}$$



So the two  $\lambda_o(t)$  components cancel out, which eliminates the need to specify the shape of the risk curve. For more information on duration analysis, see Devine and Kiefer (1991). For more details on the Cox model, see Allison (1995).

4 More precisely, this chance is derived through the following equation:

$$\text{Chance} = (e^{\beta} - 1) \bullet 100$$

5 The small number of significant factors in the long-term unemployed population may reflect the complexity and ambiguity of their interrelation in the labour market. For example, since the duration model measures the overall chances of finding a job, some factors may have specific divergent effects. If that is the case, the effects will cancel out, and no difference will be observed overall.

6 The sample for long-term unemployment is not the same as for short-term or total unemployment. The long-term sample is made up of a person's first long-term unemployment spell, whereas the sample for short-term and total unemployment uses the first unemployment spell, regardless of its length (see *Data source*).

7 Palameta (2004) showed that new immigrants were two to three times more likely than non-immigrants to have low incomes, whereas most medium-term and long-term immigrants were no more likely than non-immigrants to have low incomes. This suggests that after a period of adjustment, immigrants integrate reasonably well into the Canadian economy.

8 The frequency of long-term unemployment is the ratio of long-term unemployed workers to all unemployed workers.

9 Because of the small sample, the two groups were combined.

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# What's new?

## *Recent reports and studies*

### ■ JUST RELEASED

#### ■ *Research and development personnel*

Employment in research and development activities in Canada has increased by over one-third during the past decade. In 2002, over 177,000 people were working in research and development (R&D) activities, up from only 127,000 in 1993, a gain of 39%. Between 2001 and 2002, R&D employment showed little change.

Over 6 in 10 R&D personnel (63%) were employed by business enterprises, followed by higher education with 27%. The federal government employed 8% and the provincial governments 2%.

R&D personnel are categorized into three occupational groups: researchers, technicians and other support staff. Researchers made up 112,600 (64%). With the exception of 2002, this proportion has increased steadily over the past 10 years from 59% in 1993, contributing to the increase in R&D costs. Technicians occupied the second largest category, with 40,400 in 2002, while other support staff accounted for 24,100 (14%).

The highest concentration of R&D personnel were in Ontario (46%) and Quebec (31%), followed by British Columbia (9%) and Alberta (7%).

For more information, see the May 3, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Labour markets, business activity and mobility in urban centres*

Between 1981 and 2001, employment and unemployment rates in most census metropolitan areas converged toward the national average thanks to improvements in urban areas where labour markets were weakest in 1981.

These changes occurred against a backdrop of transformation in business activity within these urban areas: Virtually all metropolitan centres became more service-oriented during the 1990s. Underlying this shift was a decline in employment in manufacturing combined with a gain in business services. Most metropolitan areas also increased their specialization in the communications technology sector, especially in services.

The strength of urban labour markets varied widely in 2001. But while these differences were large, they were not as great as two decades earlier.

A substantial number of people moved between urban centres during a five-year period. Compared with other migrants, university-educated migrants may contribute more to the local labour supply of high skilled workers, making them highly desirable for metropolitan areas.

Between 1996 and 2001, many urban centres lost more university-educated migrants to other census metropolitan areas than they gained in return. The net losses tended to be incurred by smaller urban centres.

For more information, see the April 26, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Low-paid work and economically vulnerable families*

Even though today's workers are better educated and more experienced than their counterparts in the early 1980s, their chances of being employed in a low-wage job have changed little. However, most of them do not live in low-income families.

Between 1981 and 2004, the proportion of adult employees (aged 25 to 64) with a university degree rose from 14% to 24%. Because of aging, the adult workforce also became more experienced. Yet the

proportion of adult employees working in jobs paying less than \$10.00 per hour (in 2001 dollars) changed little between 1981 and 2004, moving from 17% to 16% over the period.

However, the majority of low-paid workers did not live in low-income families. Both in 1980 and in 2000, 70% of those employed full time lived in families with an income above Statistics Canada's low-income cutoffs.

While chances of living in low income have not increased overall for low-paid workers, recent immigrants and adults with low education levels have become increasingly economically vulnerable. The reason is that their chances of receiving low pay and also living in low-income families have risen.

For example, 6% of recent immigrants aged 35 to 54 and employed full time received low pay and lived in low income in 1980. By 2000, this proportion had doubled to 12%. Three other groups were very likely to be in this position: individuals with no high school diploma, unattached individuals (living alone or with unrelated persons), and female lone parents. Even though they represented only 37% of all full-time workers, these groups accounted for 71% of full-time employees in low-wage jobs and living in a low-income family in 2000.

Most low-paid workers do not live in low-income families. In 2000, about 30% of full-time employees (including those under 25) earning less than \$375 per week lived in families whose income fell below Statistics Canada's low-income cutoffs. This proportion was unchanged from 1980. The stability in the incidence of low income among low-paid workers masks two offsetting trends: The growing number of unattached individuals and single parents (who cannot rely on a second earner for increasing family income) tended to increase the proportion of low-paid workers in low-income families by 2 to 3 percentage points. However, this rise was offset by the growing number of dual-earner families and the growing labour market experience of low-paid workers, both of which tended to increase family income among low-paid employees.

Economic vulnerability is highly concentrated. While 5% of all full-time employees received low pay and lived in low income in 2000, unattached individuals, female lone parents, individuals with a high school education or less, and recent immigrants were much more likely to be in this position.

For more information, see the April 25, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Federal personal income tax*

The 10% of taxfilers with the highest incomes (more than \$64,500 in 2002) paid more than 50% of federal personal income tax in 2002. Between 1990 and 2002, their share went from 46.0% to 52.6%.

At the other end of the scale, the one-half of taxfilers with the lowest incomes saw their share decline. In 1990, this group paid 6.7% of total federal personal income tax; in 2002, their share had declined to 4.4%. In fact, this group paid less federal personal income tax in 2002 than in 1990, in spite of higher incomes.

Intermediate-income earners were the biggest winners in terms of effective tax rate. For this group, the rate went from \$11.75 in federal tax for each \$100 of income to \$10.14.

Between 1990 and 2002, Canadians saw their total income grow more rapidly than their federal tax bill. While federal tax increased 49.4%, total income went up 63.8%. However, this gap was entirely attributable to just two years, 2001 and 2002. During this time, total income continued to rise while federal tax revenue declined slightly. This decrease in federal tax paid in the two years was due notably to a decline in marginal tax rates. The federal government lowered tax rates in 2001.

Capital losses registered as a result of the stock market decline of the early 2000s also contributed to the decline in federal tax revenues. Thus, Canadians saw the effective federal tax rate, that is, the federal tax paid for each \$100 of income, decline during this 12-year period.

In 1990, taxfilers on average paid \$12.25 of federal tax for each \$100 of income. By 2002, the corresponding amount had declined to \$11.18. Overall during this period, the effective federal tax rate ranged between \$11.00 and \$12.50 for each \$100 of income, with one exception. In 1994, the effective federal tax rate was \$10.37.

This result for 1994 was due to a change made to the federal personal income tax, more specifically the elimination of the \$100,000 capital gains exemption. This change prompted many taxfilers to realize capital



gains accumulated over previous years and had a major impact on total income without, however, significantly affecting the total federal tax paid.

For more information, see the April 22, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Total income of farm families**

The average farm family had a total income of \$74,900 in 2002, up 3.1% from the previous year. This increase was the result of a 5.2% gain in average off-farm income, which offset a 2.3% decline in average net farm operating income, excluding capital cost allowance. The decline in average net farm operating income followed two annual increases.

Net farm operating income consists of net program payments and net market income. Net program payments fell 6.5%, while net market income rose a marginal 1.0% to \$11,400. Most of the decline in net program payments occurred because of the expiry of one-time emergency assistance payments implemented in 2001. Net program payments refer to program payments, excluding dairy subsidies and Net Income Stabilization Account withdrawals, and insurance proceeds after deducting stabilization levies or fees (government levies).

Lower livestock and product revenues, as prices for major commodities slumped after peaking in 2001, moderated the growth of net market income (which is the difference between total operating revenues and total operating expenses minus net program payments).

In 2002, net market income accounted for 58% of net farm operating income and only about 15% of total income of farm families. Off-farm income of all farm families accounted for nearly 74% of total income in 2002, up from 72% the year before. This income includes employment, investment and pension income, government social transfers, child tax payments and the like.

If the capital cost allowance (account for annual depreciation costs, for tax purposes) is removed, average total income of farm families rose 3.2% to \$62,500 in 2002. Deducting the capital cost allowance (CCA) reduced average total income by 16.5%. When taking into account CCA, farm families registered a loss of \$950, on average, in their net market income.

For more information, see the April 4, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Employer pension plans (trusteed pension funds)**

Trusteed pension fund managers struggled to increase the value of the retirement savings of 4.5 million Canadian workers over the third quarter of 2004. Assets increased to \$663.7 billion, up a slight 1.1% from the second quarter. This was the sixth quarter in a row to show a positive increase in value since the funds fell in the first quarter of 2003 to \$532.4 billion.

The funds had revenues of \$19.3 billion and expenditures of \$8.9 billion for a positive cash flow of \$10.4 billion, much less than the \$16.8 billion cash flow of the second quarter of 2003. Employer contributions remained relatively high at \$4.9 billion, but down nonetheless from \$5.6 billion contributed the previous quarter.

Of greater significance is that pension fund managers stemmed the significant losses on the sale of securities that they experienced in the first quarter of the year. In the third quarter, these losses were cut to half a billion dollars, down substantially from \$5.4 billion in the first quarter. Overall, the industry had net profits of \$6.5 billion from the sale of securities.

Pension benefits paid to retirees amounted to \$6.7 billion over the quarter. Benefit payments have been increasing slowly and irregularly over the last few years. They should increase at a more rapid rate over the next few years when the baby boom generation starts to retire in large numbers.

About 5.5 million Canadian workers belong to employer pension plans. Of these, about 4.5 million are members of trusteed plans. The remainder are covered by the consolidated revenue funds of the federal and provincial governments, or by insurance company contracts or Government of Canada annuities.

For more information, see the March 29, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *The textile and clothing industries*

Canada's textile and clothing industries have been shrinking since the turn of the millennium, as imported products satisfy a growing majority of the market. In 1992, imported textiles represented 43% of the market while imported clothing represented 35%. By 2004, imported goods supplied more than 60% of both.

In both textile and clothing industries, China has achieved the biggest gains in penetrating the Canadian import market. However, India and Mexico have also made inroads.

Strong export demand from the United States in the 1990s delayed the impact of this increased import penetration. However, both production and employment in Canada's textile and clothing industries have been falling, and domestic industries are in fact shrinking.

Job losses in the domestic industries have mounted. Employment continued to grow until 2003 when it reached 54,800, up from 53,500 in 2002. But the workforce plunged to 50,400 in 2004, which was nearer 1999 levels. The situation was worse in the clothing industry.

A major factor contributing to this shift has been the dismantling of barriers to multilateral trade. From the 1970s until the mid-1990s, trade in textiles and clothing was shaped by a system of import quotas, which had been negotiated between major importers and exporters of textiles and clothing. Canada, as a major importer, negotiated numerous arrangements with countries such as China and India.

Prior to the introduction of the Canada-United States Free Trade Agreement in 1989, Canadian-made products satisfied about 70% of domestic demand for textiles and clothing. Subsequently, between 1989 and 1992, imports from the United States soared and the share of the Canadian market captured by imported products rose substantially. By 1998, imported textiles and clothing had taken over more than half the market from Canadian-made products.

In 1992, imported products accounted for 43% of the Canadian textiles market. By 2004, this proportion had ballooned to 60%. Similarly, imported clothing accounted for 35% in 1992; by 2004, this had soared to 62%.

Trade in textiles and clothing between Canada and the United States flourished in the 1990s as a result of the Free Trade Agreement. As barriers to trade in textiles and clothing faced by other countries have fallen, there has been a substantial shift away from the United States to other countries such as China and, to a lesser extent, India.

China has achieved the biggest gains in the Canadian import market of both textiles and clothing. Its share of textile imports was relatively steady at 6% between 1992 and 1999. By 2002, imports from China had doubled and China's share of imports into Canada had risen to 11%. In 2004, China shipped textile products worth about \$800 million into Canada, which accounted for 15% of all Canada's imported textile products and 9.2% of total Canadian demand for textile products, up from 2.7% in 1992.

A combination of factors may explain China's expansion into foreign markets: its low-cost labour force, the importance of its domestic textiles such as silk, and its ability to draw upon Hong Kong's well-established financial and marketing expertise.

For more information, see the March 21, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Recent changes in the labour market*

Labour demand since 2000 has been in many ways the reverse of the 1990s, shifting from high-tech to housing and resources. This new pattern of industrial growth has profound implications for the urban-rural distribution of jobs as well as the education required of workers, their occupation and even the size distribution of employers.

Changes in labour demand have been met by important shifts in the supply of labour. In particular, workers aged 55 and over have contributed one-third of all labour force growth in the last decade, reversing several decades of decline. Still, the recovery in mining and construction jobs has allowed these industries to rejuvenate their labour force. As well, job prospects for youths in rural areas are now better than for their urban counterparts.

Employment growth in 2004 was spearheaded by mining, construction and real estate, all with gains of about 5%. So far this decade, these three industries have driven job growth. Employment rose 17% in



mining, 18% in construction and 10% in real estate. The job increases in these three industries follow a decade of job cuts. The turnaround reflects booming commodity and housing markets.

Conversely, some of the fastest growing industries in the 1990s have lagged so far this decade. The biggest turnarounds have been in manufacturing. Computers and electronic products led this reversal, giving back all of the 45,000 jobs added in the 1990s. The auto industry (including parts) has stalled after growing by 69,000 in the previous decade. In computer services, the fastest growing industry in the 1990s, growth has slowed to a crawl.

The new patterns of employment were reflected in unemployment. Mining posted its lowest-ever unemployment rate of just 4.5%. Similarly, the boom in housing sent unemployment in construction to a 30-year low of 8.6%.

The aging of the boomers continued to be the dominant demographic force in the labour market. The fastest growing group was aged 55 to 59, whose numbers rose 4.7% last year.

For more information, see the March 18, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **Labour productivity**

Productivity growth in Canadian businesses was virtually nil last year. During the fourth quarter alone, productivity rose a marginal 0.2% from the third quarter. The gain was due almost entirely to growth in gross domestic product (GDP) as the number of hours worked edged up only 0.1%.

Labour productivity has been virtually flat for two consecutive years. Last year's growth was the smallest since 1996, while the increase in 2003 was only 0.2%. Canadian businesses had to cope with a 7.1% gain in the value of the loonie relative to the U.S. greenback last year on the heels of a 10.8% gain the year before.

Productivity in the United States in 2004 benefited from higher output and a smaller increase in hours worked than in Canada. In Canada, real GDP and hours worked grew at a similar pace, leaving productivity virtually unchanged.

In Canada, where all the growth in employment was ascribed to full-time jobs, hours worked advanced 2.8%. Canada's job market performance compares

favourably with that of the United States which experienced a 1.1% increase in hours worked. This was the first time in four years that the U.S. labour market posted positive growth in hours worked.

In addition, during the past two years, Canadian businesses were forced to adapt to a major realignment of world currencies, including the Canadian dollar. The American dollar lost ground not only against the Canadian dollar, but also against most strong European and Asian currencies. Consequently, American businesses experienced higher economic growth than Canada. They also registered their first increase in three years in the number of hours worked.

For more information, see the March 10, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ ***The information and communications technology sector through the boom and bust years***

Despite its weak performance after 2000, the information and communications technology (ICT) sector still shows signs of dynamism. With dramatic increases in stock prices, output and employment, high-tech industries were an important engine of economic growth during the latter part of the 1990s. Just as dramatic, apparently, has been ICT's post-2000 slump.

Yet, even during a period of considerable retrenchment, ICT firms continued to create new establishments at a rate that exceeded the rest of the business sector. The ICT sector experienced high rates of economic growth as measured by gross domestic product (GDP) during the late 1990s. Between 1997 and 1999, GDP growth in the sector averaged 19% a year.

Since 2000, GDP growth in the sector has been weak. In 2000, economic output declined 2.6%. In 2002, it grew only 1.0%, and in 2003 it went up 2.5%. Only in 2003 did output in ICT return to its 2000 levels. ICT employment has followed a similar pattern to GDP. Employment growth averaged 13% a year between 1997 and 1999, with employment declining after 2001, particularly in manufacturing. The picture that emerges is a sector that experienced a sharp reversal from which it has not fully recovered.



For more information, see the March 2, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Rural and urban variation in occupational skill levels*

Canada's urban and rural regions are at opposite ends of the spectrum when it comes to occupational skill levels within a set of industries. In 2001, predominantly urban regions of Canada had a higher concentration of skilled workers, such as those in the managerial and professional skill-level groups, than rural regions. On the other hand, the share of unskilled occupations in rural regions was sizeably higher than in urban regions.

The share of employment in the lowest skill category, the unskilled group, was higher in rural regions, and it decreased substantially in urban regions. This polarization was evident even after regional differences in industrial structure were taken into account. This discrepancy in employment skill level widened between 1991 and 2001 as rural regions continued to lose skilled employment relative to urban regions.

For more information, see the February 24, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Business dynamics*

Of all firms that were created during the 1990s, roughly one-quarter ceased to operate within the first two years. Just over one-third of these firms survived five years or more, and only one-fifth were still in operation after 10 years.

Overall, the chances of survival improved slightly during the 1990s. Firms that were created during the second half of the decade were more likely to survive than their counterparts in the early 1990s. This was due partly to the economic recovery that followed the 1990-92 recession.

On average, the number of businesses grew by about 8,500 each year during the 1990s—about 140,500 firms began operations each year and some 132,000 went out of business. Businesses employing 100 to 499 workers experienced the strongest growth.

In 2001, roughly one million businesses were operating in Canada, up 9% from a decade earlier. The strongest growth was in Alberta, where the number of firms increased by 31%, followed by British Columbia (+15%) and Ontario (+9%).

In 2001, only 0.2% of firms employed 500 or more employees, but they accounted for 42% of total employment. The vast majority (92%) of companies employed fewer than 20 workers, and they accounted for 21% of total employment.

Most of the growth in firms between 1991 and 2001 occurred in the services sector (+13%) while the goods-producing sector advanced only 1%.

The numbers evolved at markedly different rates even within these two broad sectors. For instance, within services, the number of firms in high-knowledge industries nearly doubled (+90%), while the number in medium-knowledge industries rose 17% and the number in low-knowledge industries declined 2%. In the goods-producing sector, the number of firms in high-knowledge industries also grew at a much faster pace than in other industries.

For more information, see the February 15, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Studies from other organizations*

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### ■ *Persons with disabilities in the hotel industry*

An exploratory study of 14 Toronto hotels found that they employ relatively few persons with disabilities. While responding human resources managers agree that such hiring is a good practice, they noted numerous barriers—one being that many people do not know how effective persons with disabilities can be in a hotel setting. Other barriers to be overcome are a lack of communication among employee groups, the failure of local employment agencies to work with hotels in placing persons with disabilities, and the physical layout of the hotels. While the study is specific to Toronto, the underlying causes may extend to other markets both in Canada and the United States. See "A source of non-traditional labour for Canada's hotel

industry: Persons with disabilities” by Stefan Gröschl, *Cornell Hotel and Restaurant Administration Quarterly*, May 2005, Vol. 46, no. 2, pp. 258-274.

### ■ **Statutory firing costs and layoffs**

Firing costs may deter firms from both layoffs and temporary hiring. This paper estimates the effect of Canadian advance notice and severance laws on individual risk of permanent layoff. Individual notice laws are found to reduce the layoff risk, particularly among non-professional, non-union workers, but the effect is small. Neither group notice nor severance laws are statistically significant. These laws do not appear to substantially affect adjustment in the Canadian labour market. See “Statutory firing costs and layoffs in Canada” by Jane Friesen, *Labour Economics*, April 2005, Vol. 12, no. 2, pp. 147-168.

### ■ **The winner's curse of human capital**

This study aims to explain when start-ups are credit constrained. The magnitude of the credit constraint is conditioned by the relative productivity of human capital in both wage work and self-employment. The effect of predicted household income on start-up capital is used to indicate the existence of financial constraint. Empirical analysis reveals that entrepreneurs with high human capital have both greater financial wealth and greater levels of start-up capital, pointing to the endogenous nature of credit constraints. High human capital relaxes financial constraints, apparently due to greater productivity of human capital in wage work than in self-employment. Those least likely to be credit-constrained in self-employment are those who are least likely to switch into self-employment, and vice versa. See “The winner's curse of human capital” by Thomas Åstbro and Irwin Bernhardt, *Small Business Economics*, February 2005, Vol. 24, no. 1, pp. 63-78.

### ■ **Minimum wage effects on youth employment transitions**

The longitudinal nature of the Survey of Labour and Income Dynamics enables comparing transitions from employment to non-employment for individuals affected by minimum wage changes with appropriate comparison groups not affected by minimum wages. This is based on the large number (24) of minimum

wage changes that occurred in various provinces in the 1990s. The results indicate that the minimum wage increases have increased the transition from employment to non-employment of employed low-wage youths, who are at risk of being affected by a minimum wage increase, by around 6 percentage points. These disemployment effects in turn imply ‘minimum wage’ elasticities of about -0.4. See “Minimum wage impacts on youth employment transitions, 1993-1999” by Michele Campolieti, Tony Fang and Morley Gunderson, *Canadian Journal of Economics*, February 2005, Vol. 38, no. 1, pp. 81-104.

### ■ **Help wanted**

The article discusses the market for skilled workers and immigration policy. One of the most pressing immigration challenges is that 76% of all newcomers have chosen to settle in the three major urban centres: Montréal, Toronto and Vancouver. The so-called MTV problem has put pressure on the three to integrate a large number of immigrants, while denying most other areas of the country the benefits of an expanding pool of labour that immigration can bring. The key to provincial plans for taking a greater role in immigration is the Provincial Nominee Program. The innovation allows provinces to select their own immigration candidates separately from the backlogged pool of permanent visa applicants overseen by the federal government. The selection criteria can be based on the unique circumstances of the provincial labour market or other factors. The federal government's involvement is limited to the standard security, health and documentation checks. That makes the process considerably faster and allows the provinces to make their case directly with potential immigrants to avoid the MTV problem. See “Help wanted” by Peter Shawn Taylor, *Canadian Business*, 3/14/2005, Vol. 78, no. 6, pp. 28-32.

### ■ **The credentials conundrum**

The article comments on the importance of recognizing skilled immigrants' credentials, education and experience in their native countries. The failure to recognize the education and professional credentials of about 340,000 immigrants costs between \$3.4 billion and \$5 billion in lost wages every year, according to the Conference Board of Canada. In an effort to stem those losses, members of the business



community, government and other stakeholders formed the Toronto Region Immigrant Employment Council last year. The group has helped launch several initiatives to remove potential roadblocks to employment, including Career Bridge, an internship program that places professional newcomers with local employers to gain much-needed Canadian experience. Similar schemes are now being considered in Waterloo, Ontario, and other cities, including Vancouver, Calgary, Ottawa and Halifax. See "The credentials conundrum" by John Gray, *Canadian Business*, 3/14/2005, Vol. 78, no. 6.

### ■ ***Pensions and fertility incentives***

This paper discusses the welfare implications of a pay-as-you-go pension reform by introducing a child benefit in an endogenous fertility setting. In the model of a small open economy, higher fertility is associated with a reduction of lifetime labour supply. The optimum share of fertility-related pensions is always below unity, but generally positive. The former is true, since individuals do not take into account the impact of their labour supply choice on the parent generation. Child allowances are demonstrated to be equivalent to fertility-related pensions as instruments to achieve the optimum allocation. See "Pensions and fertility incentives" by Robert Fenge and Volker Meier, *Canadian Journal of Economics*, February 2005, Vol. 38, no. 1, pp. 28-48.

### ■ ***The evolution of job stability in Canada and the United States***

Using the 1976 to 2001 Canadian Labour Force Survey and the U.S. Current Population Survey, this paper examines the stability of currently held jobs and finds no drop in job stability over the period. However, job stability declined during the 1980s and rose during the 1990s for workers with less than one year of tenure. When 1987 and 1995 are compared, it can be seen that job stability was steady in Canada but fell slightly in the United States, with the difference concentrated among medium-tenure workers. The paper suggests that this difference was due to a slower recovery in Canada in the 1990s, which caused Canadian workers to be less mobile. See "The evolution of job stability in Canada: Trends and comparisons with U.S. results" by Andrew Heisz, *Canadian Journal of Economics*, February 2005, Vol. 38, no. 1, pp. 105-127.

### ■ ***The burden of being employed: the United States versus Canada***

The article discusses resource allocation problems faced by managers every day in the U.S. and Canada. One resource that always causes management concern is finding and retaining competent employees to meet staffing needs. If the level of pay available is greater in one country than the other, then the difference in burden on equal Canadian and U.S. salaries may be offset by the increase in pay available in the other country. Managers need to be aware of the many factors that influence the decisions of potential employees as well as what influences current employees to stay or seek other employment. See "The burden of being employed: U.S. vs. Canada" by Mitch McGhee, *Strategic Finance*, February 2005, Vol. 86, no. 8, pp. 17-18.

### ■ ***Unemployment and the welfare effects of trade policy***

In this paper, the welfare effects of tariffs and import quotas in the presence of involuntary unemployment are derived and compared. The framework used is the standard model of a competitive small open economy with many goods and factors. Optimum levels of the respective trade policy instruments are derived, as well as welfare increasing reform strategies. In all cases, the labour intensity of the import-competing sectors turns out to be a crucial variable for deriving the welfare effects. See "Unemployment and the welfare effects of trade policy" by Udo Kreickemeier, *Canadian Journal of Economics*, February 2005, Vol. 38, no. 1, pp. 194-210.

### ■ ***Recent developments in self-employment***

This paper documents the recent evolution of the self-employment rate in Canada. Between 1987 and 1998, the self-employment rate rose 3.5 percentage points from 13.8% to 17.3%. Then, over the 1999 to 2002 period, it fell by 1.9 percentage points, bringing the 2002 rate to a level only 0.2 percentage points higher than in 1992. The paper explores possible explanations for this reversal. It describes trends in self-employment by age, sex, and type of self-employment, and then decomposes the changes in the self-employment rate into the fraction due to shifts in the industrial structure



and the proportion due to changes within each industry. The paper also examines the role of the business cycle and other macroeconomic factors, such as tax rates. See "Recent developments in self-employment in Canada" by Nadja Kamhi and Danny Leung, Bank of Canada ([www.bankofcanada.ca](http://www.bankofcanada.ca)), March 2005.

### ■ *Education and earnings*

In a search model of production, where agents accumulate heterogeneous amounts of human capital, an individual worker's wage depends on average human capital in the searching population. Following this model, the study uses a large American panel data set to estimate a Mincerian wage equation augmented with terms for average human capital. It finds positive and significant spillover effect, which differs by sex and population group (white, black, and Hispanic), as well as educational status. The differing spillover effects can only partially be explained by occupational choice. See "Educational spillovers: Does one size fit all?" by Robert Baumann and Raphael Solomon, Bank of Canada ([www.bankofcanada.ca](http://www.bankofcanada.ca)), April 2005.

### ■ *Exchange rates and capital-labour ratio*

Using industry-level data for Canadian manufacturing industries from 1981 to 1997, the paper finds evidence of a negative relationship between the capital-labour ratio and the user cost of capital relative to the price

of labour. A 10% increase in the user cost of the machinery and equipment (M&E) relative to the price of labour results in a 3.3% decrease in the M&E-labour ratio in the long run. Assuming complete exchange rate pass-through into imported M&E prices, the maximum effect of a permanent 10% depreciation in the exchange rate is a 5.2% increase in the user cost of M&E, and a 1.7% decline in the M&E-labour ratio. This result implies that the cumulative growth of the M&E-labour ratio during the 1991-97 period would have been 2.3 percentage points higher had the dollar not depreciated. This may appear to be significant, but, considering that M&E as a share of total capital and capital's share of nominal output are both approximately one-third, in terms of a simple growth accounting framework, the effect on labour productivity is small. See "Do exchange rates affect the capital-labour ratio? Panel evidence from Canadian manufacturing industries" by Danny Leung and Terence Yuen, Bank of Canada ([www.bankofcanada.ca](http://www.bankofcanada.ca)), April 2005.

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#### Perspectives

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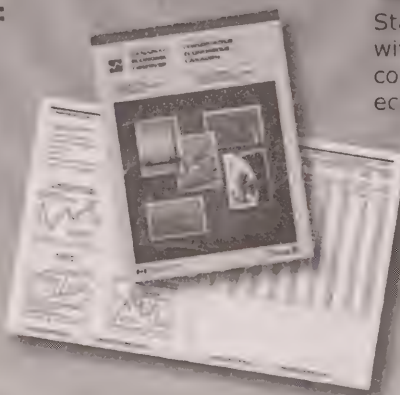
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# Key labour and income facts

## *Selected charts and analysis*

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; [bourjoa@statcan.ca](mailto:bourjoa@statcan.ca).

### **Administrative data**

#### *Small area and administrative data*

Frequency: Annual  
Contact: Customer Services  
(613) 951-9720

### **Business surveys**

#### *Annual Survey of Manufactures*

Frequency: Annual  
Contact: Dissemination agent  
(613) 951-9497

#### *Annual Surveys—Service Industries*

Frequency: Annual  
Contact: Lucie Lussier  
(613) 951-0410

#### *Business Conditions Survey of Manufacturing Industries*

Frequency: Quarterly  
Contact: Claude Robillard  
(613) 951-3507

### **Census**

#### *Census labour force characteristics*

Frequency: Quinquennial  
Contact: Michel Côté  
(613) 951-6896

#### *Census income statistics*

Frequency: Quinquennial  
Contact: John Gartley  
(613) 951-6906

### **Employment and income surveys**

#### *Labour Force Survey*

Frequency: Monthly  
Contact: Marc Lévesque  
(613) 951-4090

#### *Survey of Employment, Payrolls and Hours*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4090

#### *Employment Insurance Statistics Program*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4090

#### *Major wage settlements*

Workplace Information Directorate  
(Human Resources and Skills Development Canada)  
Frequency: Quarterly  
Contact: (819) 997-3117  
1 800 567-6866

#### *Labour income*

Frequency: Quarterly  
Contact: Anna MacDonald  
(613) 951-3784

#### *Survey of Labour and Income Dynamics*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Financial Security*

Frequency: Occasional  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Household Spending*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

### **General social survey**

#### *Education, work and retirement*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Social and community support*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Time use*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

### **Pension surveys**

#### *Pension Plans in Canada Survey*

Frequency: Annual  
Contact: Patricia Schembari  
(613) 951-9502

#### *Quarterly Survey of Trusteed Pension Funds*

Frequency: Quarterly  
Contact: Bob Anderson  
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### **Special surveys**

#### *Survey of Work Arrangements*

Frequency: Occasional  
Contact: Ernest B. Akyeampong  
(613) 951-4624

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Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Graduate Surveys*

(Postsecondary)  
Frequency: Occasional  
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(613) 951-7608



# Tourism

Whether for business or pleasure, travel has become a way of life for many people. Incentives abound, including airline discounts, mileage points that can be accumulated through credit card purchases, and all-inclusive packages to faraway destinations.

Tourism is as good for the country as it is for the individual. It not only boosts the travel industry directly, but also affects related industries such as transportation; food, beverages and accommodation; recreation; retail trade; and other service industries. Increased tourism stimulates the economy by creating jobs, which translates into increased tax revenue for governments. However, if a country receives less money from foreign tourists than its residents spend abroad, the economy may be negatively affected.

The following charts look at inbound and outbound tourists, along with related receipts and expenditures in 2002. The indicators are based primarily on statistics presented in *World Development Indicators*, 2004, published by the World Bank, Washington, D.C., March 2004. Canada is compared with the other G7 countries (the United States, the United Kingdom, France, Italy, Germany, and Japan), Australia, the Russian Federation and China. Ever since the latter two countries adopted more liberal policies on trade and the mobility of goods and services, tourism has improved considerably. Australia was chosen because of its similarity to Canada in regard to its resource-rich base and population.

## Definitions

**Tourism:** the activities of people travelling to and staying in places outside their usual environment for no more than one consecutive year for leisure, business and other purposes not related to an activity remunerated from within the place visited.

**Inbound tourists** (overnight visitors): tourists who travel to a country other than that in which they have their usual residence.

**Outbound tourists:** the number of departures that people make from their country of usual residence to any other country.

**International tourism receipts:** expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts include any other prepayment made for goods and services received in the destination country.

**International tourism expenditures:** expenditures of international outbound visitors in other countries, including payments to foreign carriers for international transport.

**Gross national income (GNI):** the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus

net receipts of primary income (wages and salaries and property income) from abroad. Data are in current US dollars.

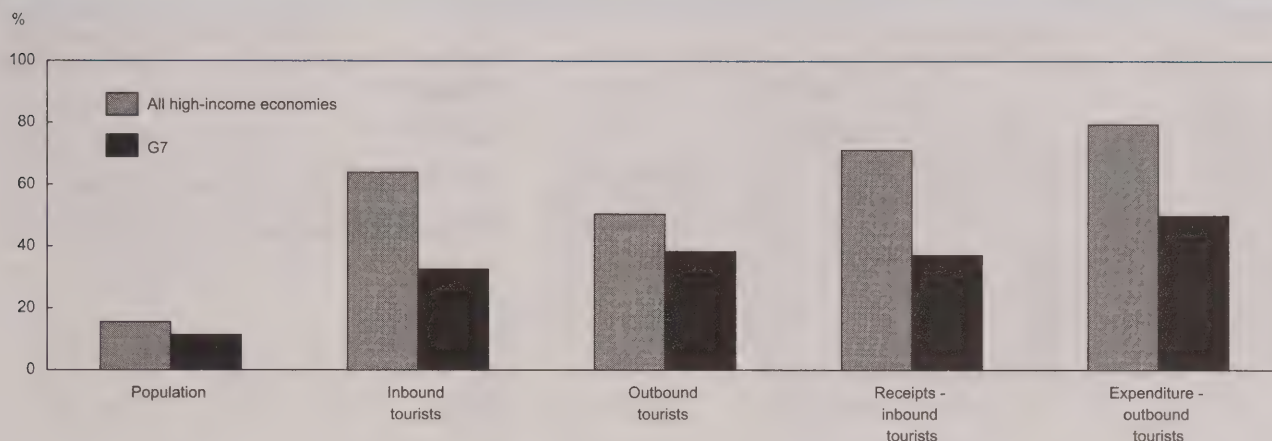
**Purchasing power parity (PPP)-based GNI:** gross national income converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power in GNI as a US dollar has in the United States. PPP-based GNI per capita is aggregate PPP-based GNI divided by total population.

**International travel account balance:** receipts (or expenditures incurred by inbound tourists) less expenditures incurred by outbound tourists. Per-capita balance is aggregate balance divided by total population.

Countries are divided into four economic groups: low income economies with a per-capita gross national income of US\$735 or less in 2002, lower-middle between \$736 and \$2,935, upper-middle between \$2,936 and 9,075, and high income with \$9,076 or more. Both China and the Russian Federation are classified as lower-middle income economies, G7 countries and Australia as high income.

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## Share of international tourists from high-income economies, 2002

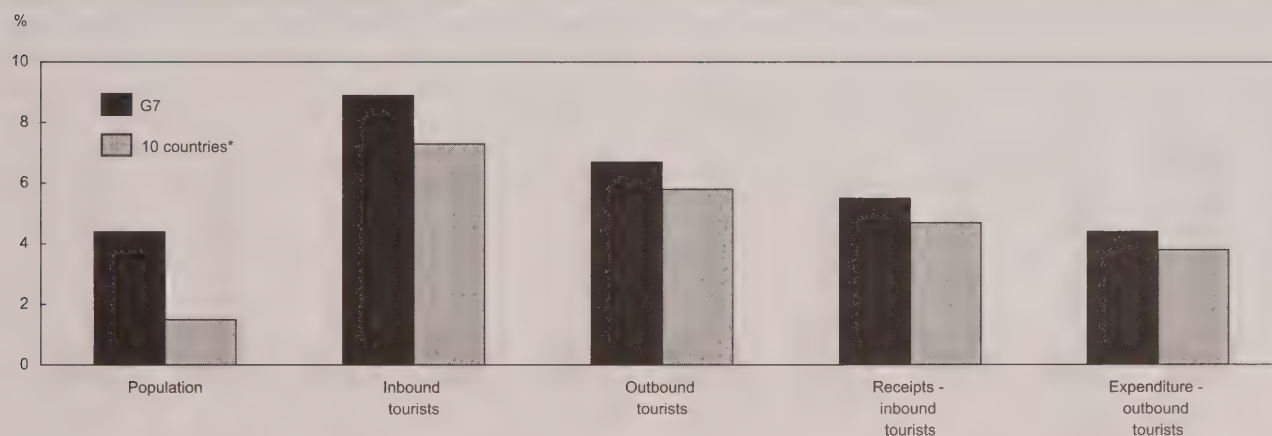


The majority of people who travel internationally are from high-income economies. In 2002, these economies constituted only 16% of the world's population of 6.2 billion but accounted for 64% of all inbound and 51% of outbound tourists. Almost 80% of the US\$449.2 billion in outbound tourist expenditures was

incurred by travellers from high-income economies, compared with 71% of the \$472.5 billion spent by their inbound counterparts.

Of high-income economies worldwide, the G7 countries accounted for the majority (73%) of the population, 76% of outbound tourists, and 63% of outbound tourist expenditures.

## Canada's tourism as a percentage of tourism of other countries, 2002

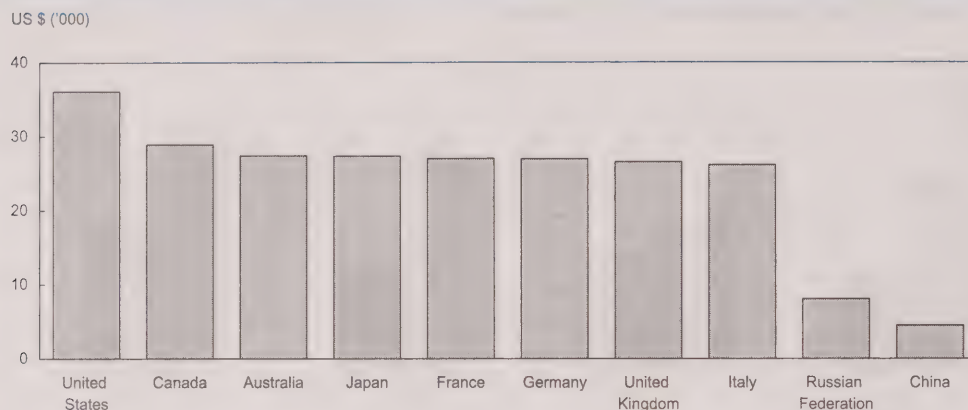


\* G-7 countries + Australia, the Russian Federation and China

Canada, with only 4.4% of the G7 population, represented 8.9% of inbound and 6.7% of outbound tourists. Shares of expenses incurred by Canadian inbound and outbound tourists were quite close—5.5% and 4.4% respectively.

When China, the Russian Federation and Australia were added to the mix, Canada's share of tourism changed little—contrary to its share of population, which fell from 4.4% to 1.5%. This was the result of including China with its population of 1.3 billion.

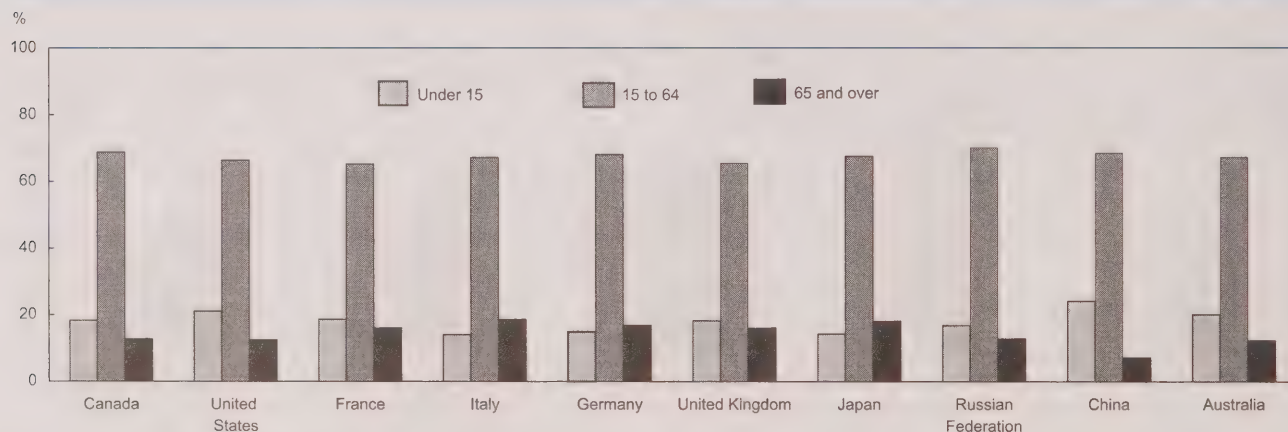
### Purchasing power parity based on per-capita gross national income, 2002



pean members of the G7. China had the lowest of all 10 countries at \$4,520. In economic size, based on gross national income, China ranked above the Russian Federation, Australia, Italy and Canada. On per-capita income, population size pushed China to the bottom.

Income level is a key determinant in travelling for pleasure. The higher the overall per-capita income in a country, the more likely its residents are to travel. In 2002, the United States had the highest per-capita gross national income (GNI) at \$36,110, followed by Canada at \$28,930. Japan had a higher GNI than any of the four Euro-

### Population by age, 2002



Age is another key determinant in travelling. Generally, younger people and older people tend to travel internationally, while those with family and mortgage responsibilities tend to stick closer to home. The proportion of people 65 and over was higher in Italy,

Japan, Germany, France and the United Kingdom (between 16% and 19%), compared with Canada, the United States, the Russian Federation, and Australia (between 12% and 13%). China was lowest with 7%.



## Inbound and outbound tourists, 1990 and 2002



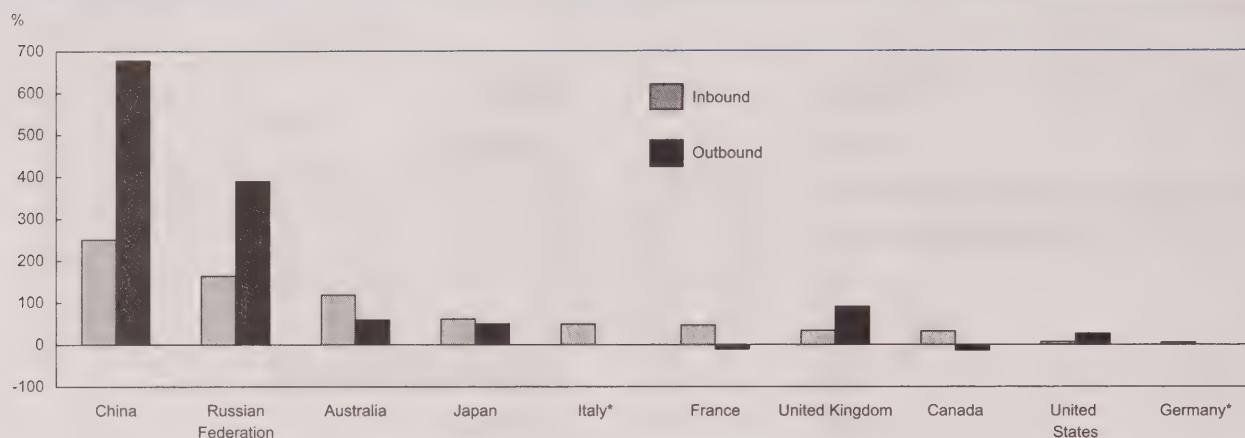
\* 1990 data for Italy and Germany are not available.

Between 1990 and 2002, Canada's tourist balance changed, as the number of inbound tourists per 100 outbound tourists rose from 74 to 113. France and Australia also experienced a rise in inbound tourists, with France's ratio soaring from 270 per 100 to 442. France seems to have been the most popular destination for tourists in 2002. On the other hand, fewer tourists chose to go to the United States, United Kingdom, and Russian Federation. In China, the ratio dropped because of the increase in outbound tourists.

Although Canadians were more likely to travel abroad in 2002 than Australians, Italians, Chinese and French, they were far behind the Germans, Japanese, and

Russians. Canada had 88 outbound tourists for every 100 inbound, compared with 408 for Germany, 315 for Japan, and 256 for the Russian Federation. The events of September 11, 2001 may have dampened tourism to the United States and United Kingdom, but did not seem to discourage their residents from travelling abroad. In 2002, the United States had 135 outbound tourists for every 100 inbound, compared with 113 in 1990. The corresponding numbers for the United Kingdom were 246 and 173.

## Growth over the 1990-2002 period in number of inbound and outbound tourists\*

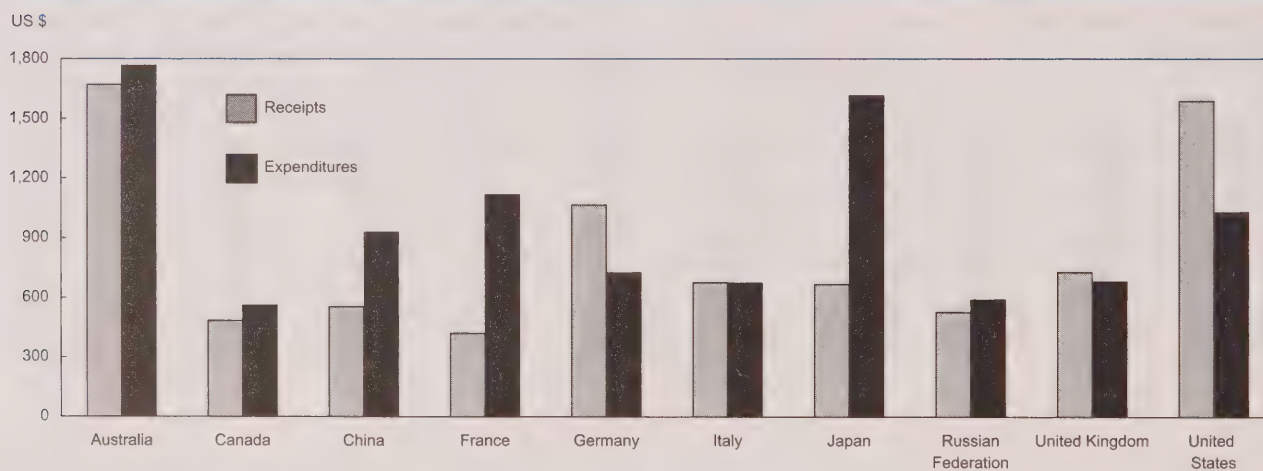


\* 1990 data on number of outbound tourists for Italy and Germany are not available.

Between 1990 and 2002, the number of tourists coming into Canada grew 32% while those travelling abroad declined 13%. France showed a similar pattern. These percentages seem minuscule when com-

pared with the emerging tourist countries of China and the Russian Federation. Tourists to China skyrocketed 251% while Chinese residents travelling abroad went up 678%. The corresponding rates for the Russian Federation were 164% and 390%.

## Mean receipts per inbound tourist and expenditure per outbound tourist, 2002

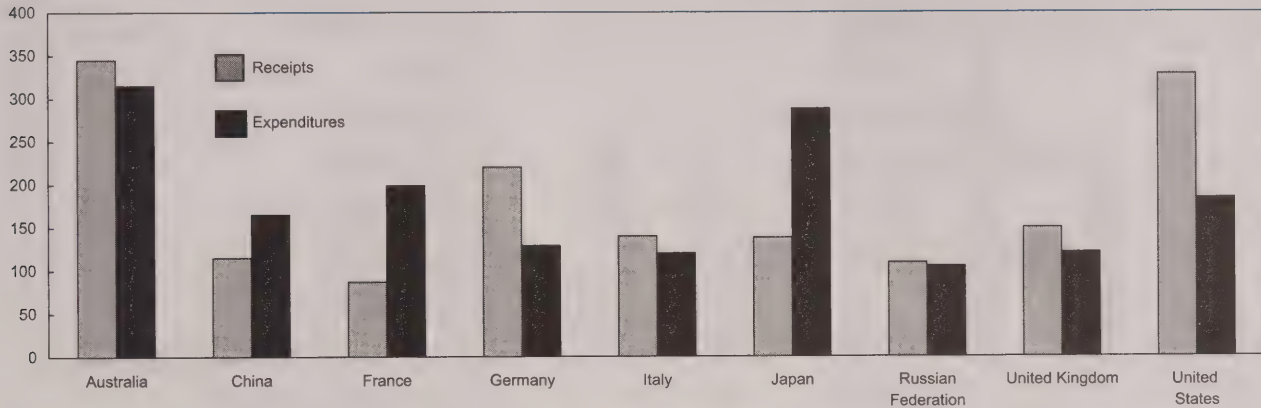


In 2002, tourists to Canada spent an average of \$US 484, compared with \$561 spent abroad by Canadian tourists. Tourists to and from Australia spent the most—\$1,671 and \$1,767 respectively. Next in mag-

nitude were outbound tourists from Japan, followed by inbound tourists to the United States. In 6 of the 10 countries (includes Canada), inbound tourists spent less, on average, than outbound tourists.

### Index of mean receipt per inbound tourist and mean expenditure per outbound tourist, 2002

Index (Canada = US\$100)



Using \$100 spent by a tourist in Canada as an index, inbound tourists to Australia spent an average of \$345. The figure was \$328 for the United States, \$115 for China, and just \$87 for France. As for outbound tourists, compared with Canada at an average of \$100, Australia spent the most (\$315) and the Russian Fed-

eration the least (\$105). In fact, outbound tourists in all nine countries in the chart spent more than Canadian outbound tourists. Some of the differences can be attributed to variations in cost of living, length of stay, entrance fees and sightseeing costs, and customs or other taxes levied on tourists.



## Receipts from inbound tourists as a percentage of exports and expenditures of outbound tourists as a percentage of imports, 2002



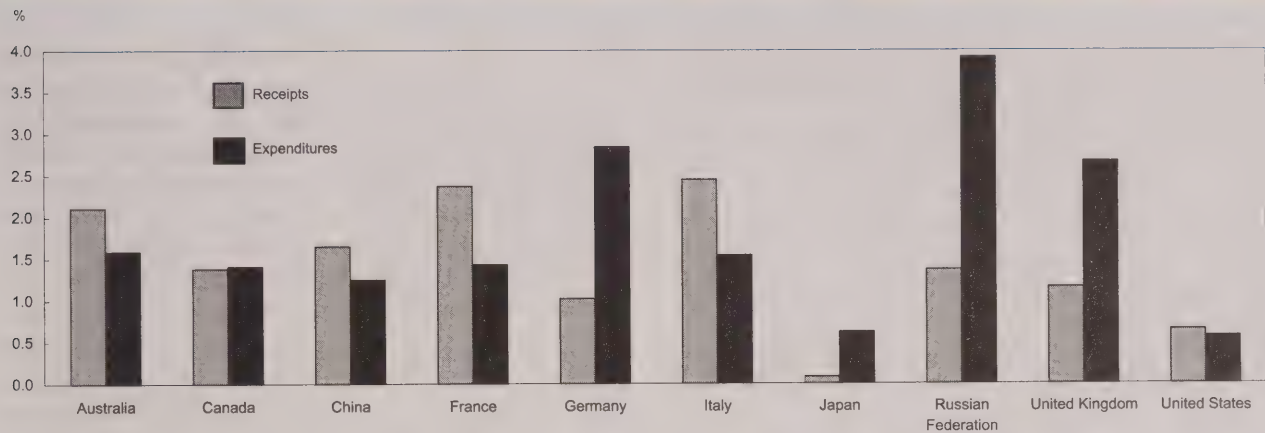
Just like exports of goods and services, inbound tourists bring money into the country. Australia appeared to benefit the most from inbound tourists, with receipts representing 9.7% of the value of goods and service exports. Italy was next at 8.6%, followed by France at 8.2%. For Canada, the percentage was only 3.2%, slightly higher than Germany and Japan, but far lower than the leading countries.

In the same way that a country pays to import goods and services, so too it loses money when its residents spend abroad. For the Russian Federation, the out-

flow of tourists proved economically disadvantageous in 2002, since their expenditures abroad represented 14.1% of the value of imports. The United Kingdom followed at 9.3% with Germany at 8.3%. Canada ranked at the bottom with 3.7%.

Since the values of exports and imports in Canada were quite close, as were the receipts of inbound tourists and the expenditures of outbound tourists, the receipts-to-exports ratio and the expenditures-to-imports ratio were fairly comparable—3.2% and 3.7%. No other country showed such close ratios.

### Receipts from inbound tourists and expenditures of outbound tourists as a percentage of gross national income, 2002

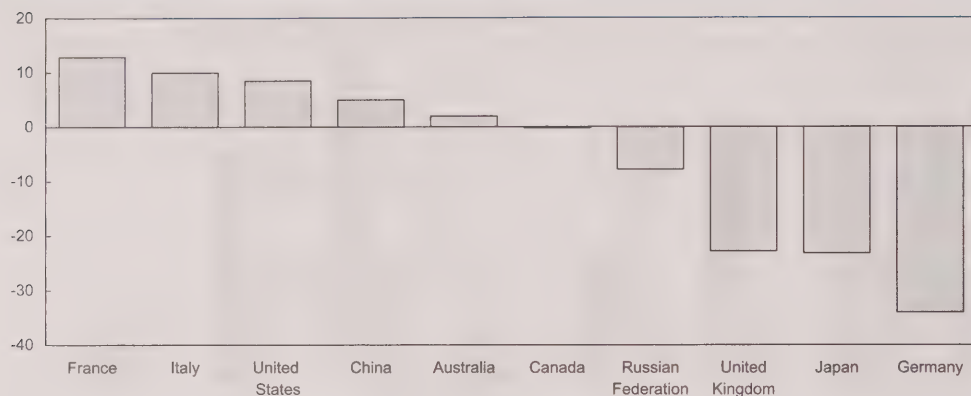


Since tourism boosts a country's economy, receipts from inbound tourists and expenditures of outbound tourists can be linked to gross national income (GNI) in terms of ratios. For Canada in 2002, receipts represented 1.38% of GNI and expenditures 1.41%. Italy benefited the most from tourism with a receipts-to-GNI ratio of 2.45%. The Russian Federation benefited

the least with an expenditures-to-GNI ratio of 3.92%. Of the 10 countries considered, France, Italy, China, Australia and the United States had a surplus in their international travel account (receipts-to-GNI ratio greater than expenditures-to-GNI ratio), while the other five countries were running deficits.

**Balance\* on tourism account, 2002**

US \$ (billions)

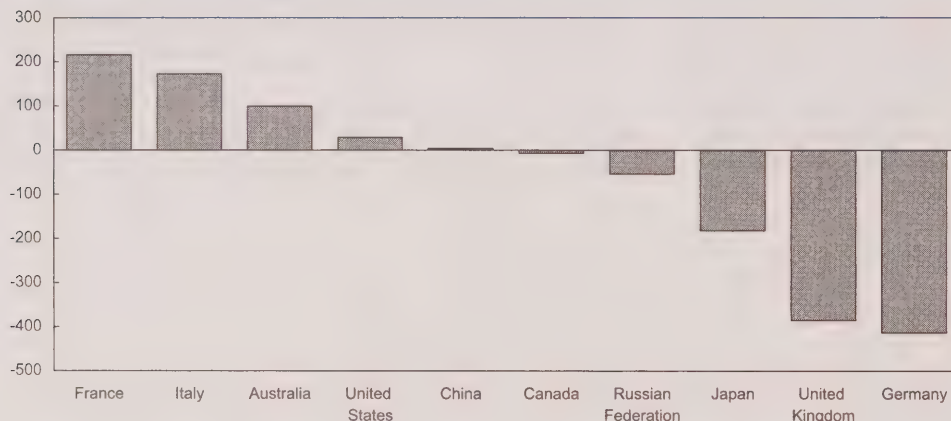


\* Receipts from inbound tourists less expenditures of outbound tourists.

In 2002, France had the largest surplus (\$12.9 billion) in its international travel account, followed by Italy with about \$10 billion. Canada, on the other hand, had a deficit of \$229 million—tiny in comparison with Germany's \$34 billion. Germany

**Per-capita balance\* on tourism account, 2002**

US \$



\* Receipts minus expenditures divided by population.

Population size may affect country comparison of international account balances. For example, a country with a large population will likely spend more tourist dollars abroad in total than a country with a small population. From that perspective,

had a large number of outbound tourists compared with inbound, while the reverse was true for France.

The ranking of countries based on the difference between receipts and expenditures and ranking based on ratios with respect to GNI differ because of different GNI values. Nevertheless, each indicator is useful, depending on whether the net travel account balance or the size of the economy is to be considered.

travel account balance per capita may be a more appropriate indicator. The surplus/deficit situation would not change, but the resulting statistic may be simpler to interpret. For example, Germany's international travel account balance in 2002 put each German into the red by US\$413, compared with US\$43, compared with \$385 for someone in the United Kingdom and just \$7 for a Canadian. On the other hand, France's international travel account showed a gain of \$216 per person compared with \$29 in the United States.



# Work absences

There are many kinds of absence. Some, such as annual vacations, are generally considered beneficial for both the organization and the employee. Since they are usually scheduled, their effect on the organization can be fairly easily absorbed; the same can be said of statutory holidays. Other absences, such as those caused by illness and family-related demands, are generally unavoidable, as are those due to inclement weather.

'Absenteeism'—a term used to refer to absences that are avoidable, habitual and unscheduled—is a source of irritation to employers and co-workers. Such absences are disruptive to proper work scheduling and output, and costly to an organization and the economy as a whole.

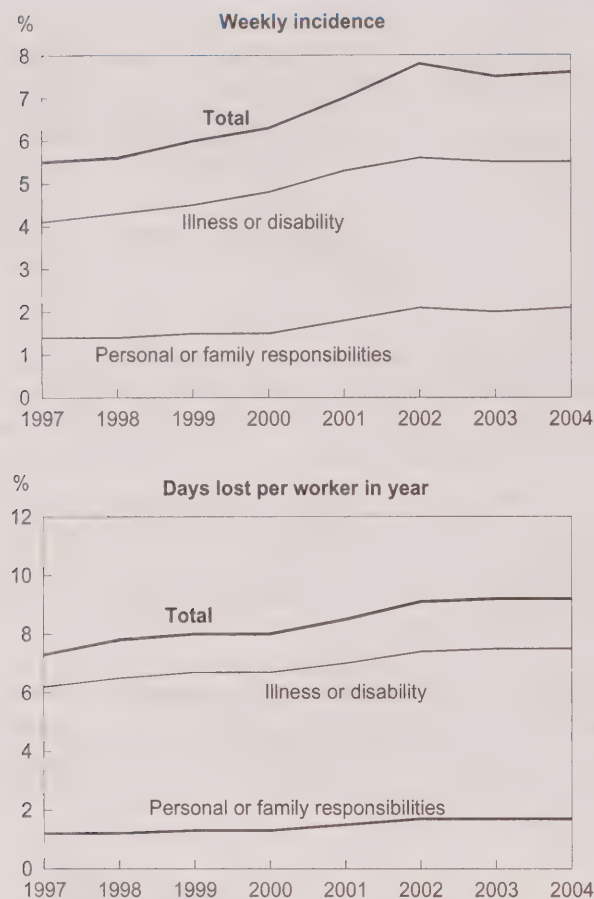
Although absenteeism is widely acknowledged to be a problem, it is not easy to quantify. The dividing line between avoidable and unavoidable is difficult to draw, and absenteeism generally masquerades as legitimate absence. The Labour Force Survey (LFS) can provide measures of time lost because of 'personal reasons,' that is, illness or disability, and personal or family responsibilities. However, within these categories, it is impossible to determine if an absence is avoidable or unscheduled. LFS data on absences for personal reasons can, however, be analyzed to identify patterns or trends that indicate the effect of absenteeism (see *Data source and definitions*).

## Recent trends—1997 to 2004

Estimates from the Labour Force Survey reveal a steady rising trend in both work absence incidence and time lost for personal reasons (own illness or disability, and other personal and family demands) between 1997 and 2002 and a stabilization thereafter.<sup>1</sup> Several factors accounted for the rising trend: notably, the aging of the workforce; the growing share of women in the workforce, especially mothers with young children; high stress among workers,<sup>2</sup> and the increasing prevalence of generous sick and family-related leave at the workplace (Chart).

In an average week in 1997, excluding women on maternity leave, about 5.5% (480,000) of all full-time employees holding one job were absent from work for all or part of the week for personal reasons. By 2004, the figure had risen to 7.6% (801,000) (Table 1). Total work time missed for these reasons also rose steadily, from 2.9% of the weekly scheduled work time in 1997 to 3.7% in 2004. Extrapolated over the full year, work time lost for personal reasons increased from the equivalent of 7.3 days per worker in 1997 to 9.2 days in 2004.

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**Chart: Work absence rates, 1997 to 2004**

Source: Labour Force Survey

### Variations in absence rates in 2004

Absence for personal reasons differs among various worker groups. Several factors are responsible; among the principal ones are working conditions (for example, the physical environment, degree of job stress, employer-employee relations, collective agreement provisions, work schedules); adequacy and affordability of community facilities such as child-care centres and public transportation; family circumstances, especially the presence of preschool children and other dependent family members; and physical health of the worker, a factor closely related to age.

Measuring the effects of these and other contributing factors is not easy since many are not captured by the LFS. However, some insight is gained by examining personal absences in 2004 by selected demographic characteristics, occupation and industry, and other attributes such as union and job status.

### Demographic differences

In 2004, excluding women on maternity leave, an estimated 7.6% (801,000) of full-time employees missed some work each week for personal reasons: 5.5% for own illness or disability, and 2.1% for personal or family responsibilities (Table 2). As a result, full-time employees lost about 3.7% of their work time each week.

On average, each full-time employee lost 9.2 days over the year for personal reasons (about 7.5 for own illness or disability, and 1.7 for personal or family demands). In total, full-time employees missed an estimated 96.5 million workdays for personal reasons in 2004.

On average, men working full time lost fewer days (8.0 or 6.4 for illness or disability plus 1.6 for personal or family demands) than women full-time employees (10.9 or 9.0 plus 1.9).

The presence of preschool-aged children exerts a strong influence on work absences for personal or family responsibilities. For example in 2004, full-time employees in families with at least one pre-school aged child lost on average 4.4 days, compared with only 1.3 days lost by workers in families with no pre-school age children.

The growing prevalence of family-leave entitlements in the workplace, the extension of Employment Insurance parental benefits,<sup>3</sup> and the greater involvement of fathers in child care appear to have eliminated the difference between the sexes in respect to work absences for personal or family responsibilities. In 1997, women with preschool-aged children and working full time lost 4.2 days for such reasons, compared with 1.8 days for men in similar circumstances. By 2004, the gap was virtually non-existent (4.5 days for women versus 4.3 for men).

Workdays missed because of illness or disability tended to rise with age, from an average of 5.2 days for youth (15 to 19) to 11.1 for full-time employees aged 55 to 64.

## Industry and sector

Work absence rates differ by sector (public or private) and industry, with almost all of the difference emanating from illness and disability absences (Table 3). Contributing factors include the nature and demands of the job, the male/female composition of the workforce, and the union density—the last being a strong determinant of the presence or lack of paid sick/family leave entitlements.

Full-time employees in the public sector (more likely unionized or female) lost more work time in 2004 for personal reasons (about 12.0 days on average) than their private-sector counterparts (8.4 days).

At the major (2-digit) industry level, the most workdays missed were by employees in health care and social assistance (14.4 days), transportation and warehousing (11.1), and public administration (10.9).

The lowest averages were recorded by full-time workers in the professional, scientific and technical industry (5.6 days), and in construction (7.2).

## Occupation

Contributing factors by occupational absence rates are similar to those for industry (Table 4). Again, as by major industry, differences arise mainly from time lost due to illness or disability.

The most days lost in 2004 were recorded for full-time employees in health occupations (15.0); and occupations unique to production (12.6).

Workers in managerial jobs (5.3), natural and applied sciences (6.3), and culture and recreation (7.5) recorded the fewest days lost.

## Union coverage, job status, workplace size and job tenure

Full-time workers who belonged to unions or were covered by collective agreements missed almost 80% more workdays on average in 2004 for personal reasons than their non-unionized counterparts (13.1 versus 7.3) (Table 5).

Workers who considered their jobs to be permanent (and hence more likely to be unionized) lost more workdays (9.4) than those who said their jobs were not permanent (7.4).

Days lost tended to rise with workplace size, increasing from a low of 7.4 in workplaces with fewer than 20 employees (firms more likely to have low union rates) to over 10.0 in workplaces with 100 or more (firms likely to have high union rates).

Days lost tended to rise with job tenure, with almost all the differences arising from illness and disability. They rose from an average of 6.6 days among persons with tenure of up to one year to more than 10.0 days among those with over nine years (the latter group likely being older).

## Province and CMA

Work absence levels differed by geographic area (Table 6), with most of the variation again arising from illness or disability.

Full-time employees in Nova Scotia (11.0 days), Quebec (10.8) lost the most work time in 2004. Those in Prince Edward Island (7.6) and Alberta (7.5) lost the least.

Among the census metropolitan areas, workers in St. John's, Saguenay, Gatineau, Thunder Bay and Saskatoon lost the most workdays (an average of 10.5 days or higher per full-time worker). Those in Kingston, Toronto, Hamilton, Kitchener-Waterloo, Calgary, and Edmonton lost the least time (an average of less than 8.0 days per full-time worker).

## Perspectives

### ■ Notes

1 1997 marks the introduction of the revised Labour Force Survey questionnaire.

2 For more information on this subject, see Margot Shields, "Stress, health and the benefit of social support," *Health Reports* (Statistics Canada, Catalogue 82-003-XIE) 15, no. 1, January 2004.

Also see Cara Williams, "Sources of workplace stress," *Perspectives on Labour and Income* (Statistics Canada, Catalogue 75-001-XIE) 4, no. 6, June 2003 online edition.

3 In December 2000, changes in Employment Insurance regulations extended the duration of parental leave benefits from 10 to 35 weeks. The 35 weeks can be taken by one (qualifying) parent, or they can be split between both (qualifying) parents.



Table 1: Absence rates for full-time paid workers by sex, 1997 to 2004, excluding maternity leave

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
	%			%			days		
<b>Both sexes</b>									
1997	5.5	4.1	1.4	2.9	2.5	0.5	7.3	6.2	1.2
1998	5.6	4.3	1.4	3.1	2.6	0.5	7.8	6.5	1.2
1999	6.0	4.5	1.5	3.2	2.7	0.5	8.0	6.7	1.3
2000	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
2001	7.0	5.3	1.8	3.4	2.8	0.6	8.5	7.0	1.5
2002	7.8	5.6	2.1	3.6	3.0	0.7	9.1	7.4	1.7
2003	7.5	5.5	2.0	3.7	3.0	0.7	9.2	7.5	1.7
2004	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
<b>Men</b>									
1997	4.6	3.4	1.2	2.5	2.1	0.4	6.2	5.3	0.9
1998	4.9	3.7	1.2	2.7	2.3	0.4	6.8	5.8	1.0
1999	5.2	3.8	1.3	2.8	2.4	0.4	7.0	5.9	1.1
2000	5.5	4.1	1.4	2.8	2.4	0.4	7.0	5.9	1.1
2001	6.1	4.6	1.6	3.1	2.5	0.5	7.6	6.3	1.3
2002	6.7	4.8	1.9	3.2	2.6	0.6	8.0	6.5	1.6
2003	6.5	4.7	1.8	3.3	2.6	0.6	8.2	6.6	1.5
2004	6.6	4.6	2.0	3.2	2.6	0.7	8.0	6.4	1.6
<b>Women</b>									
1997	6.7	5.0	1.7	3.6	3.0	0.6	9.0	7.5	1.5
1998	6.7	5.1	1.6	3.7	3.1	0.6	9.1	7.7	1.5
1999	7.1	5.3	1.8	3.8	3.2	0.6	9.5	7.9	1.6
2000	7.5	5.7	1.8	3.8	3.2	0.6	9.4	7.9	1.5
2001	8.2	6.2	2.0	3.9	3.2	0.7	9.8	8.0	1.8
2002	9.2	6.7	2.4	4.3	3.5	0.8	10.7	8.7	1.9
2003	8.9	6.6	2.3	4.3	3.5	0.8	10.7	8.8	1.9
2004	8.9	6.6	2.3	4.3	3.6	0.7	10.9	9.0	1.9

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

**Table 2: Absence rates for full-time paid workers by sex, age, education and presence of children, 2004, excluding maternity leave**

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
Age	%			%			days		
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
15 to 19	6.7	5.1	1.6	2.6	2.1	0.5	6.6	5.2	1.4
20 to 24	6.6	4.5	2.1	2.6	1.9	0.7	6.4	4.7	1.7
25 to 34	7.8	5.3	2.5	3.2	2.4	0.8	8.1	6.1	2.0
35 to 44	7.9	5.5	2.4	3.8	3.0	0.8	9.4	7.5	1.9
45 to 54	7.5	5.7	1.8	4.0	3.4	0.6	9.9	8.5	1.4
55 to 64	8.2	6.6	1.6	5.0	4.4	0.6	12.5	11.1	1.4
65 and over	5.8	4.6	F	3.5	2.9	F	8.7	7.3	F
Men	6.6	4.6	2.0	3.2	2.6	0.7	8.0	6.4	1.6
15 to 19	6.3	4.8	1.5	2.5	2.0	0.5	6.3	5.1	1.2
20 to 24	6.2	4.2	2.0	2.4	1.8	0.6	5.9	4.4	1.5
25 to 34	6.7	4.3	2.4	2.8	2.0	0.8	7.0	4.9	2.1
35 to 44	6.7	4.6	2.1	3.2	2.5	0.7	8.0	6.2	1.7
45 to 54	6.5	4.8	1.7	3.5	3.0	0.5	8.8	7.5	1.3
55 to 64	7.1	5.6	1.5	4.4	3.9	0.5	11.0	9.7	1.3
65 and over	5.7	4.6	F	3.2	2.7	F	7.9	6.7	F
Women	8.9	6.6	2.3	4.3	3.6	0.7	10.9	9.0	1.9
15 to 19	7.2	5.6	1.6	2.8	2.1	0.6	7.0	5.4	1.6
20 to 24	7.2	5.0	2.2	2.8	2.1	0.8	7.1	5.2	1.9
25 to 34	9.2	6.6	2.5	3.9	3.1	0.8	9.7	7.8	1.9
35 to 44	9.4	6.7	2.7	4.6	3.7	0.8	11.4	9.3	2.1
45 to 54	8.7	6.7	2.0	4.5	3.9	0.7	11.4	9.7	1.7
55 to 64	9.8	8.0	1.7	5.9	5.3	0.6	14.8	13.2	1.6
65 and over	F	F	F	F	F	F	F	F	F
Educational attainment									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
Less than Grade 9	8.7	6.7	2.0	5.1	4.5	0.6	12.7	11.1	1.6
Some secondary	8.6	6.6	2.0	4.6	3.9	0.7	11.6	9.9	1.7
High school graduate	7.5	5.5	2.0	3.7	3.1	0.6	9.3	7.7	1.6
Some postsecondary	8.0	5.6	2.5	3.7	2.9	0.8	9.3	7.4	1.9
Postsecondary certificate or diploma	7.9	5.7	2.2	3.8	3.1	0.7	9.5	7.8	1.8
University degree	6.7	4.6	2.1	2.8	2.1	0.7	7.0	5.2	1.7
Presence of children									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
With children	8.2	5.5	2.7	3.9	3.0	0.9	9.9	7.6	2.3
Preschool-aged (under 5 years)	9.3	5.2	4.2	4.1	2.4	1.7	10.4	6.0	4.4
5 to 12 years	8.3	5.7	2.6	3.8	3.1	0.7	9.4	7.7	1.7
13 years and over	7.4	5.6	1.8	4.0	3.4	0.6	9.9	8.5	1.4
Without children	7.2	5.5	1.7	3.5	3.0	0.5	8.7	7.4	1.3

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

**Table 3: Absence rates for full-time paid workers by industry and sector, 2004, excluding maternity leave**

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
	%			%			days		
<b>All industries</b>	<b>7.6</b>	<b>5.5</b>	<b>2.1</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.2</b>	<b>7.5</b>	<b>1.7</b>
Public employees	9.4	7.1	2.2	4.8	4.0	0.8	12.0	10.0	2.0
Private employees	7.1	5.0	2.1	3.4	2.7	0.7	8.4	6.8	1.7
<b>Goods-producing</b>	<b>7.5</b>	<b>5.2</b>	<b>2.3</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.1</b>	<b>7.4</b>	<b>1.7</b>
Primary	5.8	3.9	1.9	3.2	2.4	0.7	7.9	6.1	1.8
Agriculture	6.4	4.0	2.4	2.7	2.0	0.7	6.8	5.1	1.8
Other	5.5	3.8	1.7	3.3	2.6	0.7	8.3	6.5	1.8
Utilities	7.9	5.8	2.1	4.1	3.5	0.6	10.2	8.8	1.5
Construction	6.2	3.9	2.3	2.9	2.1	0.8	7.2	5.3	1.9
Manufacturing	8.1	5.8	2.3	3.9	3.3	0.7	9.9	8.2	1.7
Durable	8.3	5.8	2.5	3.9	3.2	0.7	9.9	8.1	1.8
Non-durable	7.8	5.8	2.0	4.0	3.3	0.6	9.9	8.3	1.6
<b>Service-producing</b>	<b>7.7</b>	<b>5.6</b>	<b>2.1</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.2</b>	<b>7.5</b>	<b>1.7</b>
Trade	6.7	4.7	2.0	3.0	2.4	0.6	7.6	6.0	1.6
Wholesale	6.5	4.2	2.3	2.8	2.0	0.7	6.9	5.1	1.8
Retail	6.7	4.9	1.8	3.2	2.6	0.6	8.0	6.4	1.5
Transportation and warehousing	7.6	5.7	2.0	4.4	3.7	0.7	11.1	9.3	1.8
Finance, insurance, real estate and leasing	6.9	5.1	1.8	3.1	2.6	0.5	7.8	6.5	1.3
Finance and insurance	7.3	5.5	1.8	3.3	2.8	0.6	8.3	6.9	1.4
Real estate and leasing	5.3	3.5	1.8	2.4	2.0	0.4	6.0	4.9	1.1
Professional, scientific and technical	6.4	4.2	2.2	2.2	1.6	0.6	5.6	4.1	1.5
Business, building and support services	8.5	6.3	2.2	3.8	3.2	0.7	9.6	7.9	1.7
Educational services	7.7	5.7	2.1	3.5	2.8	0.8	8.8	6.9	1.9
Health care and social assistance	10.1	8.2	1.9	5.8	5.0	0.8	14.4	12.5	1.9
Information, culture and recreation	6.8	4.8	2.0	3.1	2.5	0.7	7.8	6.1	1.7
Accommodation and food services	6.4	4.4	1.9	3.2	2.4	0.7	7.9	6.1	1.8
Other services	7.1	4.9	2.2	3.0	2.4	0.6	7.6	6.1	1.5
Public administration	9.5	6.8	2.6	4.3	3.5	0.9	10.9	8.6	2.2
Federal	11.6	8.2	3.4	5.2	4.0	1.2	13.1	10.1	3.0
Provincial	8.9	6.8	2.0	3.9	3.3	0.7	9.9	8.2	1.7
Local, other	7.3	5.1	2.2	3.6	2.9	0.7	9.0	7.2	1.8

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).



**Table 4: Absence rates for full-time paid workers by occupation, 2004, excluding maternity leave**

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
		%			%			days	
<b>All occupations</b>	<b>7.6</b>	<b>5.5</b>	<b>2.1</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.2</b>	<b>7.5</b>	<b>1.7</b>
Management	5.3	3.3	1.9	2.1	1.5	0.6	5.3	3.8	1.5
Business, finance and administrative	8.4	6.0	2.4	3.6	2.9	0.7	9.0	7.3	1.7
Professional	6.5	4.5	2.0	2.6	2.0	0.6	6.6	5.0	1.5
Administrative	8.3	5.7	2.6	3.2	2.6	0.7	8.1	6.4	1.7
Clerical	8.9	6.5	2.4	4.0	3.3	0.7	10.0	8.3	1.8
Natural and applied sciences	6.7	4.6	2.2	2.5	1.9	0.6	6.3	4.8	1.5
Health	9.8	8.2	1.7	6.0	5.3	0.7	15.0	13.2	1.8
Professional	7.8	6.1	F	3.7	3.3	F	9.3	8.2	F
Nursing	11.6	9.7	1.9	7.5	6.6	0.9	18.7	16.5	2.3
Technical	7.8	6.6	1.2	4.9	4.3	0.5	12.1	10.8	1.4
Support staff	10.4	8.6	1.8	6.2	5.5	0.7	15.6	13.8	1.8
Social and public service	8.4	6.2	2.2	3.9	3.0	0.8	9.7	7.6	2.1
Legal, social and religious	9.6	7.1	2.5	4.5	3.5	0.9	11.2	8.9	2.3
Teachers and professors	7.2	5.4	1.8	3.3	2.6	0.7	8.3	6.4	1.9
Secondary and elementary	8.1	6.2	1.9	3.7	2.9	0.8	9.2	7.1	2.1
Other	5.2	3.6	1.6	2.6	2.0	0.6	6.4	4.9	1.4
Culture and recreation	7.0	4.9	2.1	3.0	2.2	0.7	7.5	5.6	1.9
Sales and service	6.9	5.1	1.8	3.5	2.9	0.7	8.8	7.2	1.6
Wholesale	5.5	3.5	2.0	2.2	1.6	0.6	5.5	4.0	1.5
Retail	6.5	4.7	1.8	3.1	2.5	0.7	7.8	6.1	1.7
Food and beverage	5.8	4.2	1.7	3.0	2.4	0.7	7.5	5.9	1.7
Protective services	6.6	4.9	1.7	3.8	2.9	0.8	9.4	7.4	2.0
Childcare and home support	9.2	7.2	2.0	4.5	3.7	0.8	11.3	9.3	2.0
Travel and accommodation	8.3	6.5	1.8	4.5	3.9	0.6	11.3	9.7	1.6
Trades, transport and equipment operators	7.4	5.2	2.2	3.9	3.2	0.7	9.7	8.0	1.7
Contractors and supervisors	5.6	3.6	2.0	2.5	1.8	0.7	6.3	4.5	1.8
Construction trades	6.9	4.7	2.2	3.7	2.9	0.8	9.4	7.3	2.1
Other trades	7.4	5.2	2.2	3.6	3.0	0.6	9.1	7.6	1.5
Transport equipment operators	7.3	5.4	1.9	4.4	3.8	0.7	11.1	9.4	1.7
Helpers and labourers	8.6	6.2	2.3	4.3	3.6	0.7	10.8	8.9	1.9
Occupations unique to primary industry	6.2	4.2	2.0	3.2	2.6	0.6	8.0	6.4	1.6
Occupations unique to production	9.5	6.9	2.6	5.0	4.2	0.8	12.6	10.5	2.1
Machine operators and assemblers	9.3	6.7	2.6	4.8	4.0	0.8	12.1	10.1	2.0
Labourers	10.5	8.1	2.4	6.1	5.0	1.0	15.1	12.5	2.6

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

**Table 5: Absence rates for full-time paid workers by workplace size, job tenure, job status and union coverage, 2004, excluding maternity leave**

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
		%	%		days				
Workplace size									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
Under 20 employees	6.5	4.4	2.2	2.9	2.3	0.7	7.4	5.6	1.7
20 to 99 employees	7.6	5.5	2.0	3.6	2.9	0.7	8.9	7.3	1.6
100 to 500 employees	8.2	6.1	2.1	4.2	3.5	0.7	10.4	8.7	1.8
Over 500 employees	9.2	7.0	2.2	4.8	4.0	0.8	12.0	10.0	1.9
Job tenure									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
1 to 12 months	6.6	4.4	2.2	2.6	2.0	0.7	6.6	4.9	1.6
Over 1 to 5 years	7.5	5.3	2.2	3.4	2.7	0.7	8.5	6.7	1.8
Over 5 to 9 years	7.9	5.6	2.3	3.9	3.1	0.8	9.7	7.7	2.0
Over 9 to 14 years	8.1	5.9	2.2	4.1	3.3	0.8	10.2	8.3	1.9
Over 14 years	8.2	6.4	1.9	4.6	4.0	0.6	11.6	10.1	1.5
Job status									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
Permanent	7.8	5.6	2.1	3.8	3.1	0.7	9.4	7.7	1.7
Non-permanent	6.5	4.3	2.1	2.9	2.2	0.8	7.4	5.5	1.9
Union coverage									
Both sexes	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
Union member or covered by collective agreement	9.5	7.4	2.1	5.2	4.5	0.8	13.1	11.1	1.9
Non-unionized	6.7	4.6	2.1	2.9	2.3	0.7	7.3	5.7	1.6

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).

**Table 6: Absence rates for full-time paid workers by province, region and census metropolitan area (CMA), 2004, excluding maternity leave**

	Incidence*			Inactivity**			Days lost per worker in year†		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
<b>Province and region</b>		%			%		days		
<b>Both sexes</b>	<b>7.6</b>	<b>5.5</b>	<b>2.1</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.2</b>	<b>7.5</b>	<b>1.7</b>
Atlantic	7.6	5.6	1.9	4.1	3.4	0.7	10.2	8.5	1.7
Newfoundland and Labrador	7.0	5.4	1.5	4.1	3.5	0.6	10.3	8.8	1.5
Prince Edward Island	6.4	4.4	2.0	3.0	2.4	0.6	7.6	6.0	1.6
Nova Scotia	8.0	5.9	2.1	4.4	3.6	0.7	11.0	9.1	1.9
New Brunswick	7.6	5.6	2.0	3.9	3.2	0.7	9.6	8.0	1.7
Quebec	8.2	6.2	2.0	4.3	3.8	0.6	10.8	9.4	1.4
Ontario	7.6	5.3	2.3	3.4	2.7	0.8	8.6	6.7	1.9
Prairies	7.5	5.2	2.3	3.4	2.6	0.8	8.4	6.5	1.9
Manitoba	8.6	6.2	2.4	3.9	3.2	0.7	9.8	8.0	1.8
Saskatchewan	8.4	6.0	2.5	4.1	3.2	0.9	10.3	8.0	2.2
Alberta	6.8	4.7	2.1	3.0	2.2	0.8	7.5	5.6	1.9
British Columbia	6.8	5.2	1.7	3.5	2.9	0.6	8.8	7.3	1.5
<b>CMA</b>									
<b>Both sexes</b>	<b>7.6</b>	<b>5.5</b>	<b>2.1</b>	<b>3.7</b>	<b>3.0</b>	<b>0.7</b>	<b>9.2</b>	<b>7.5</b>	<b>1.7</b>
All CMAs	7.6	5.5	2.1	3.5	2.9	0.7	8.8	7.1	1.7
St. John's	7.8	6.2	1.6	4.3	3.7	0.6	10.7	9.2	1.5
Halifax	7.7	5.8	2.0	4.0	3.3	0.7	10.0	8.3	1.7
Saint John	7.7	5.5	2.2	4.1	3.4	0.7	10.1	8.4	1.7
Saguenay	7.2	5.8	F	4.2	3.7	F	10.5	9.4	F
Québec	7.9	6.3	1.6	4.0	3.6	0.4	10.1	9.0	1.1
Montréal	8.4	6.3	2.1	4.1	3.6	0.6	10.3	8.9	1.4
Trois-Rivières	6.8	5.3	F	3.5	3.1	F	8.8	7.6	F
Sherbrooke	7.3	5.6	F	4.0	3.6	F	10.1	9.0	F
Gatineau	10.4	8.0	2.4	5.1	4.3	0.8	12.7	10.7	2.0
Ottawa	9.8	6.9	2.9	4.0	3.1	0.9	10.1	7.7	2.4
Kingston	7.0	4.8	F	3.2	2.4	F	7.9	6.0	F
Greater Sudbury / Grand Sudbury	7.7	5.9	F	4.1	3.4	F	10.2	8.5	F
Toronto	7.0	4.8	2.2	3.0	2.3	0.7	7.6	5.8	1.7
Hamilton	7.1	5.1	2.0	3.1	2.4	0.7	7.8	6.0	1.8
St. Catharines-Niagara	7.9	5.7	2.1	3.5	2.9	0.7	8.8	7.2	1.7
London	6.8	4.9	1.9	3.3	2.6	0.7	8.2	6.5	1.6
Windsor	8.1	5.7	2.4	3.9	3.1	0.8	9.8	7.9	2.0
Kitchener-Waterloo	7.4	4.9	2.5	3.0	2.3	0.7	7.6	5.8	1.8
Oshawa	7.8	5.4	2.4	3.6	2.8	0.8	8.9	7.0	2.0
Thunder Bay	8.1	6.0	F	4.4	3.6	F	11.0	8.9	F
Winnipeg	8.8	6.4	2.4	3.8	3.1	0.7	9.4	7.8	1.7
Regina	8.4	6.2	2.2	4.0	3.1	0.9	9.9	7.7	2.2
Saskatoon	8.6	6.1	2.5	4.2	3.3	0.8	10.5	8.4	2.1
Calgary	6.9	4.7	2.2	3.0	2.2	0.8	7.5	5.5	2.0
Edmonton	6.9	5.0	1.9	2.9	2.4	0.6	7.4	5.9	1.5
Abbotsford	7.5	5.7	F	3.8	3.2	F	9.5	8.0	F
Vancouver	6.3	4.8	1.5	3.4	2.8	0.6	8.4	6.9	1.4
Victoria	7.6	5.7	1.9	3.6	2.9	0.7	9.0	7.3	1.7
Non-CMAs	7.8	5.5	2.3	4.1	3.3	0.8	10.2	8.2	2.0
Urban centres	7.9	5.8	2.1	4.0	3.3	0.6	9.9	8.3	1.6

Source: Labour Force Survey

\* Absent workers divided by total.

\*\* Hours absent divided by hours usually worked.

† Inactivity rate multiplied by working days in year (250).



## Data source and definitions

The data in this article are annual averages from the **Labour Force Survey (LFS)**. They refer to full-time employees holding only one job. Part-time, self-employed and unpaid family workers are excluded because they generally have more opportunity to arrange their work schedules around personal or family responsibilities. Multiple jobholders, too, are excluded because it is not possible using LFS data to allocate time lost, or the reason for it, to specific jobs. Women on maternity leave are also excluded. Some human resource practitioners exclude persons on long-term illness or disability leave (exceeding one year) from their attendance management statistics. Such persons are, however, included in Statistics Canada's work absence estimates if they count themselves as employed (that is, they continue to receive partial or full pay from their employer). In 2004, the number of employed persons on such long-term illness or disability leave averaged only 22,000 in a typical week. Their exclusion would have reduced the weekly work absence incidence for illness or disability from 5.5% to 5.3%, the inactivity rate from 3.0% to 2.8%, and days lost per worker that year from 7.5 to 7.0.

**Personal reasons for absence** are split into two categories: 'own illness or disability' and 'personal or family responsibilities' (caring for own children, caring for elder relative, and other personal or family responsibilities). Absences for these two reasons represented about 28% of all time lost by full-time paid workers each week in 2004. Vacations, which accounted for about 39% of total time away from work, are not counted in this study, nor are statutory holidays, which represented 16%. Maternity leave represented 10% and other reasons, 7%.

The **incidence of absence** is the percentage of full-time paid workers reporting some absence in the reference week. In calculating incidence, the length of work absence—whether an hour, a day, or a full week—is irrelevant.

The **inactivity rate** shows hours lost as a proportion of the usual weekly hours of full-time paid workers. It takes into account both the incidence and length of absence in the reference week.

**Days lost per worker** are calculated by multiplying the inactivity rate by the estimated number of working days in the year (250).

### Reasons for work absences in the LFS

The LFS sets out the following reasons for being away from work:

- own illness or disability
- caring for own children
- caring for elder relative (60 years or older)
- maternity leave (women only)
- other personal or family responsibilities
- vacation
- labour dispute (strike or lockout)
- temporary layoff due to business conditions
- holiday (legal or religious)
- weather
- job started or ended during week
- working short time (because of material shortages, plant maintenance or repair, for instance)
- other

As normally published, personal or family responsibilities consist of caring for own children, caring for elder relative, and other personal or family responsibilities.

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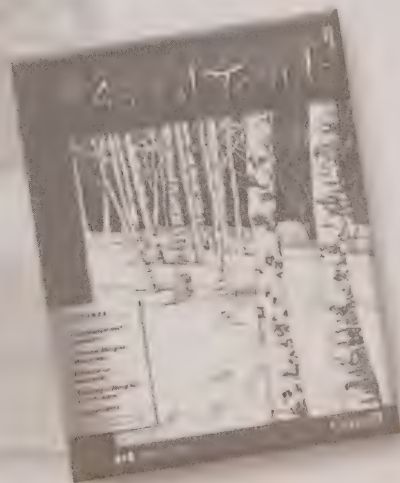
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# PERSPECTIVES

ON LABOUR AND INCOME

**AUTUMN 2005**

Vol. 17, No. 3

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- HOW CANADA  
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- WHO GAINS FROM  
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- JOB STRAIN AND  
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*Diane Galarneau, Jean-Pierre Maynard and Jin Lee*

Changes in hours worked normally track employment changes very closely. Recently, however, employment has increased more than hours, resulting in an unprecedented gap. In effect, the average annual hours worked have decreased by the equivalent of two weeks. Many factors can affect the hours worked. Some are structural or cyclical — population aging, industrial shifts, the business cycle, natural disasters, legislative changes or personal preferences. Others are a result of the survey methodology. How have the various factors contributed to the recent drop in hours of work?

## 18 How Canada compares in the G8

*Katherine Marshall*

The G8 countries have only 13% of the world's population, but they account for 46% of the global economy. Despite being the smallest member of the group, Canada's GDP per capita puts it near the top of the economic ranking. This article presents selected indicators from various sources to describe how Canada compares with the other members of the G8, highlighting changes since the early 1990s.

## 27 Who gains from computer use?

*Cindy Zoghi and Sabrina Wulff Pabilonia*

Workers who use computers earn more than those who do not. Is this a productivity effect or merely selection (that is, workers selected to use computers are more productive to begin with). After controlling for selection, the average worker enjoys a wage premium of almost 4% upon adopting a computer. This premium, however, obscures important differences by education and occupation. Long-run returns to computer use are over 5% for most workers. Differences between short-run and long-run returns suggest that workers may share training costs through sacrificed wages.



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## 35 Job strain and retirement

*Martin Turcotte and Grant Schellenberg*

Excessive demands coupled with a lack of decision-making power can lead to job strain. Are older workers (aged 45 to 57) who experience high job strain more likely to retire early than those who do not feel under the same pressure at work? Managers, professionals, and technicians seem to be more affected than other occupations.

## 41 Collective bargaining priorities

*Ernest B. Akyeampong*

Certain provisions such as pay, leave and supplementary medical coverage are common to virtually all collective agreements. Others such as a cost-of-living allowance reflect the socioeconomic climate of the times. From a list of 10 collective bargaining provisions, employers in the Workplace and Employee Survey were asked the ones included in their settlements. The two most common in 2001 dealt with job security and occupational health and safety.

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## Perspectives on Labour and Income

# Highlights

## *In this issue*

### ■ Whither the workweek? ... p. 5

- Changes in hours worked normally track employment changes very closely. Recently, however, employment has increased more than hours, resulting in an unprecedented gap. In effect, annual hours worked have decreased by the equivalent of two weeks for every worker.
- A closer examination shows that more than half of the drop in the average workweek was attributable to Labour Force Survey methodology.
- Even after adjustment, hours worked still show a drop—but only one week annually per employee instead of two weeks.
- Two-thirds of the drop in adjusted hours comes from a rise in hours lost for reasons other than statutory holidays. An increase in part-time work explains 20% of the drop.

### ■ How Canada compares in the G8 ... p. 18

- The Group of Eight (G8) comprises some of the most economically powerful countries in the world, accounting for 13% of the world's population, but 46% of the global economy. Average GDP per capita among the G8 was \$29,700 in 2004, compared with \$5,400 for non-G8 countries.
- Export trade was worth \$US 322 billion to Canada in 2004, resulting in a record trade balance of \$US 46 billion, and representing 32% of the GDP. Of all the G8 countries, Canada had the greatest increase in export trade over the past decade—252%.

- Overall, Canada had the third highest employment rate (73.3%) among those aged 25 to 64, and Canadian women had the highest rate (68.5%) in the G8.
- In 2002, 43% of Canada's population aged 25 to 64 had a college diploma or university degree—the highest rate in the G8.

### ■ Who gains from computer use? ... p. 27

- Computers should increase the productivity of workers using them, or else employers would not invest in the technology. It is also implied that wages should be higher for workers who use computers. A model accounting for basic worker characteristics indicates a naïve computer wage premium of 17%. The term 'naïve' is used since many argue that workers with higher abilities (not directly measured) are generally those given computers. Correcting for the selection bias results in a much smaller premium of 4%.
- By broad occupational group, managers earned a computer wage premium of 7%, while professionals and trade and technical workers earned about 4%. No significant premium was found in other occupational groups (marketing and sales workers, clerical and administrative workers, and production workers with no trade or certification).
- The computer wage premium was quite high for workers with an advanced degree (18%) or a bachelor's degree (10%), still positive for those with college or vocational training (3%), and not statistically different from zero for those with a high school diploma or less.

## ■ Job strain and retirement ... p. 35

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- Job strain, whether caused by a heavy workload, time constraints, or conflicting demands, may be an overlooked factor in the decision to retire.
- Older workers (aged 45 to 57) with high job strain in managerial, professional or technical jobs were much more likely to retire early than those with low job strain. For sales/services/clerical and blue-collar occupations, job strain was unrelated to retirement.
- If job strain can be mitigated by the ability to balance demands with the power to make decisions, older workers may be more inclined to continue working.

## ■ Collective bargaining priorities ... p. 41

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- Among Canadian employers in 2001, the most common bargaining provisions (appearing in over 80% of settlements) were job security and occupational health and safety. Cost-of-living adjustment (COLA) clauses, less popular than in the high-inflation days of the early 1980s, were least common (43%).
- Other popular provisions, appearing in more than 6 in 10 settlements, centred on pay equity and employment equity, as well as on education and training—the latter driven by rapidly evolving technology and heightened business competitiveness.
- Changes in business practices also appear to be increasing the popularity of provisions dealing with contracting out, workplace reorganization, and employee participation in decision making.

## ■ What's new? ... p. 47

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- Multifactor productivity
- Does inflation vary with income?
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### Perspectives

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# Whither the workweek?

*Diane Galarneau, Jean-Pierre Maynard and Jin Lee*

**W**hen employment increases, a corresponding rise in hours worked can usually be expected. And indeed, from 1976 to 2000, changes in employment were fairly accurately reflected in hours worked. However, since 2000, this relationship has greatly diminished (Chart A). From 2000 to 2004, employment rose 8.1%, compared with only 4.3% for overall hours worked. Such a differential is unprecedented. The robust employment growth was surprising. Lower growth in hours seemed more consistent with reduced economic growth in Canada and the stagnation of employment in the United States. This contrast led some economists to question Canada's exceptional employment record in recent years (RBC 2004).

If employment is growing more rapidly than hours, then average hours per worker are declining. According to the Labour Force Survey (LFS), average weekly hours actually worked declined for three consecutive years—2001, 2002 and 2003—before rising slightly in 2004. The decline from 2000 to 2003 affected all provinces and population groups. According to the LFS, the decrease averaged 1.4 hours per week per worker (Table 1). In annual terms, this represents a drop of some two weeks of work.

Many factors can influence hours worked. Some are structural or cyclical, such as population aging, shifts in industrial structure, the business cycle, natural disasters, legislative changes, or simply personal preference. Others originate from the survey's conceptual frame-

work, which should be re-examined periodically to see that it is still measuring what it is supposed to. This article looks at the contribution of these different factors in the decline in hours worked.

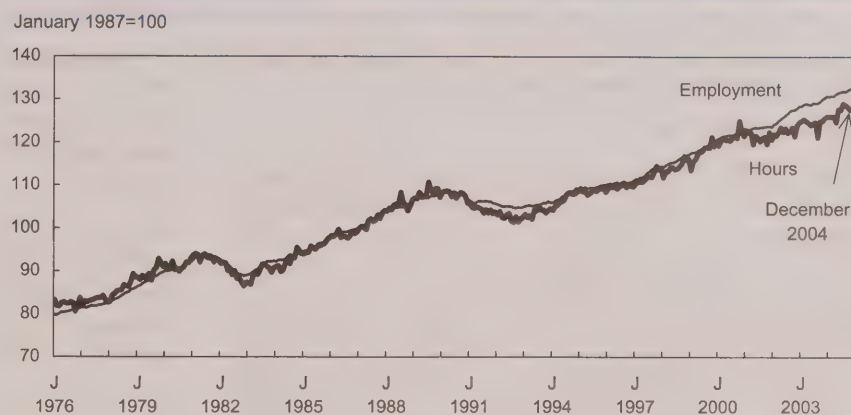
## Decomposition of actual hours

The LFS collects information on both usual hours and actual hours of work. The drop in average hours appears in actual hours.

Usual hours of work are generally more stable since they reflect regular work schedules (Chart B). Changes in usual hours reflect fairly permanent changes in weekly work schedules.

On the other hand, hours actually worked can vary from week to week. By definition, actual hours are the sum of usual and overtime hours (paid or otherwise) minus hours of absence for any reason (for example,

**Chart A** The relationship between employment and annual hours worked has diminished.



Source: Labour Force Survey, 1976 to 2004

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**Table 1 Components of actual hours worked per week by employees<sup>1</sup>**

	2000	2001	2002	2003	2004	Change, 2000 to 2003	
						Total	Contribution
							%
<b>Before adjustment</b>							
Usual hours	35.7	35.7	35.5	35.5	35.5	-0.3	20.6
Overtime	1.7	1.7	1.8	1.7	1.7	0.0	-2.9
Hours lost	3.6	4.3	4.4	4.8	4.6	1.1	82.3
Actual hours <sup>2</sup>	33.8	33.1	33.0	32.4	32.6	-1.4	100.0
<b>After adjustment</b>							
Usual hours	35.7	35.7	35.5	35.5	35.5	-0.3	38.5
Overtime	1.7	1.7	1.8	1.7	1.7	0.0	-5.4
Adjusted lost hours	3.4	3.8	3.8	3.9	3.8	0.5	66.9
Adjusted actual hours	34.0	33.6	33.5	33.2	33.3	-0.7	100.0
LFS average actual hours <sup>2</sup>	33.7	33.0	32.9	32.3	32.5	-1.4	...

Source: Labour Force Survey

1 Self-employed workers report only absences of one week or more. Absences in this table are for less than a week as well as for a week or more.

2 The average actual hours calculated in the identity are slightly different than the LFS average, with a tenth of a percentage point separating the two values. This is not significant at the 5% level and could be attributable to survey error.

illness, vacation, personal or family responsibilities). (For a definition of these hours, see *Definitions and reference week*). This relationship is expressed in the following identity:

$$\overline{H}_a = \overline{H}_u + \overline{H}_o - \overline{H}_l$$

where

$\overline{H}_a$ : Average actual hours

$\overline{H}_u$ : Average usual hours

$\overline{H}_o$ : Average overtime hours

$\overline{H}_l$ : Average hours lost

This identity can be verified for employees only, since total hours lost are reported only for this category of workers.<sup>4</sup> An examination of the average values<sup>5</sup> of these components reveals that the drop in actual hours per employee happened gradually. From a peak in 2000, the rate dropped to a low in 2003 and then rallied somewhat in 2004. The 1.4 hour drop in average weekly hours between 2000 and 2003 is largely attributable to an increase in hours lost (Table 1, before adjustment). In fact, this accounted for more than 82% of the decrease in average hours.

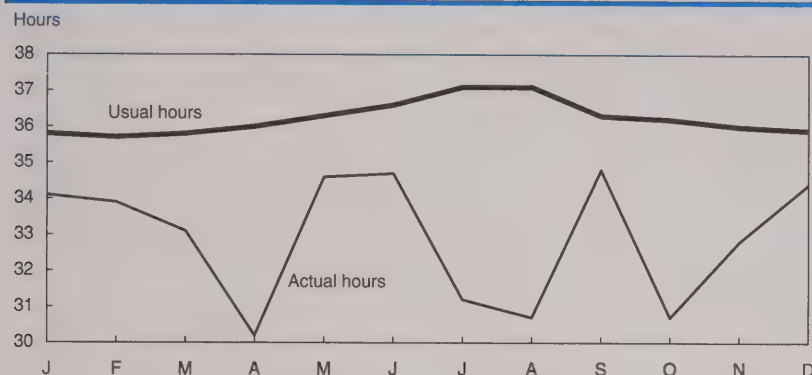
The rest of the decrease came from a decline in usual hours, where the average fell from 35.7 to 35.5 hours per week between 2001 and 2002 and then remained stable for the rest of the observation period. Overtime hours during the period fluctuated between an average of 1.7 and 1.8 hours per week, slightly tempering the decrease in actual hours worked.

### Increase in hours lost for statutory holidays suspect

A breakdown serves to identify the source of the increase in hours lost. Absences were grouped according to six types: illness, vacation, statutory holidays, personal or family responsibilities, maternity leave, and other.<sup>6</sup>

Between 2000 and 2003, increases occurred for all types of absence, but particularly for statutory holidays (Table 2, unadjusted data). The average number of weekly hours not worked for this reason quadrupled from 0.2 hours in 2000 to 0.8 hours in 2003. On an annual basis, this amounts to 1.4 days in 2000 compared with 5.5 days in 2003.<sup>7</sup> Part of the rise occurred between 2000 and 2001, and again between 2002 and 2003. Between 2000 and 2003, statutory holidays explained almost 57% of the rise in total hours lost. However, the increase seems suspect, since the number of statutory holidays in each year was identical.



**Chart B Usual hours of work are more stable than actual hours.**

Source: Labour Force Survey, 2003

### The decrease in hours: very real, but overestimated

Actual and usual hours of work are counted by the LFS every month, during a reference week that usually includes the 15th of the month.<sup>8</sup> Not all reference weeks are comparable. Among other things, some weeks include statutory holidays while others do not. These holidays have a greater or lesser effect, depending on whether they affect all Canadian workers or only some of them (for example, the Saint-Jean-Baptiste holiday in Quebec). Each year, the LFS captures only a portion of statutory holidays, and from one year to the next it captures different ones.

For example, in 2000, two statutory holidays often captured by the LFS were entirely or partially missed. Easter occurred during the week preceding the reference week and thus was not captured. Remembrance Day, which occurs on November 11 is a fixed holiday.<sup>9</sup> When it falls on a Saturday, as in 2000, it has almost no effect because it will be taken on the Monday following the reference week.<sup>10</sup> Also, the hours lost during the October 2000 reference week, which included Thanksgiving, were underestimated because of a technical problem related to the introduction of the new computer-assisted interview system.<sup>11</sup> In 2003, all these holidays were captured. A comparison between 2000 and 2003 of average actual hours per month shows the effect of the holidays not captured in 2000: hours for April, October and November 2000 appear much

higher than in 2003 (Chart C). But in reality, their high value largely reflects the holidays missed by the survey. Hours in 2000 were thus overestimated because holidays were under-represented. This had a major impact on the reduction of actual hours between 2000 and 2003, since it more than doubled the decline in average actual hours.

However, even after adjusting to neutralize the estimation bias caused by the irregular presence of statutory holidays,<sup>12</sup> a decrease in average hours between 2000 and 2003 remains (Table 1). But it amounts to 0.7 hours on average per week per employee (just under one week annually) instead of 1.4 hours per week (two weeks annually). This decrease occurred gradually—from 34.0 in 2000 to 33.6 in 2001 to 33.5 in 2002 and then to 33.2 in 2003. What explains this decline?

### Reasons for the decline

Using the adjusted data, the components of the identity were re-examined for the years 2000 and 2003. This exercise confirmed the importance of various reasons

**Chart C Average actual hours vary from year to year primarily because of holidays in the survey reference week.**

Source: Labour Force Survey



## Definitions and reference week

### Usual and actual hours

Usual hours are an employee's regular or contractual hours, excluding overtime.<sup>1</sup> The number of hours actually worked consists of the hours a respondent spent working during a reference week (including paid or unpaid overtime). By definition, the concept of hours actually worked excludes hours missed because of vacation, statutory holidays, illness or any other reason.<sup>2</sup>

### The LFS reference week

Two types of absence are likely to bias the estimate of hours actually worked: statutory holidays and vacations in certain industries (such as the construction industry in Quebec) or those specific to particular periods of the year (such as the March school break). In Canada, 13 statutory holidays are recognized by federal or provincial administrations (see table below). Employers are required to grant these holidays or pay their employees a premium.

Several regularly fall outside the survey reference weeks: New Year's Day, Victoria Day (or la Journée nationale des patriotes in Quebec, which since November 2002 has replaced la fête de Dollard), Canada Day, Labour Day and Christmas. These holidays affect a sizeable portion of workers, and since they are statutory in most provinces, or at least the most populous ones, their impact is considerable. But since they are not captured by the survey, they are also not reflected in hours not worked. The actual hours of the reference week for the month in which these holidays occur are not affected by reference week biases. But these reference weeks are not representative of their month. In fact, the actual hours for these months will be overestimated.

Thanksgiving and Remembrance Day are usually captured by the LFS (see table next page). When they are, the hours in the reference week are lower. But since the reference week represents the month, the average for the month will be underestimated.

Easter is captured sporadically by the LFS. When it is captured, it does not always have the same effect. This holiday has a larger impact when the reference week includes Good Friday, which is a statutory holiday for most provinces. In Quebec, the employer can decide to grant Good Friday or Easter Monday as a holiday. Easter Monday is a holiday for a large proportion of public-sector employees. Thus, in 2003, 48% of employees reported hours lost because Good Friday fell within the reference week, compared with 27% in 2004, when the reference week included Easter Monday.

Statutory holidays with a fixed date, such as Christmas and New Year's Day, fall on a weekend in some years. In this case, these holidays must be carried over to the following Monday. Remembrance Day, however, is an exception. A large proportion of workers do not have the opportunity to take this holiday the following Monday when it falls on the weekend. This holiday therefore has a more limited impact in some years (David 1989), as was the case in 1989, 1990, 1995, 2000 and 2001.

Other holidays affect only certain localities, provinces or religious groups. Whether they are captured or not will therefore have a more limited impact on hours worked at the national level.

When the annual averages for hours actually worked are compared between years, they may appear to increase or decrease, often reflecting the presence or absence of statutory holidays during the 12 reference weeks.

### Other major effects

In 2000, the LFS introduced a new computer-assisted interview system that allows an interviewer to electronically capture respondent information. In addition to facilitating the interviewer's task, it also reduces transcription errors. The system even reminds respondents of any statutory holiday during the reference week. This seems

## Federal and provincial statutory holidays

		Federal	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
January 1	New Years Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
February	Family Day										✓	
March/April	Good Friday	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Easter Monday	✓					✓					
May	Victoria Day (patriotes)	✓					✓	✓	✓	✓	✓	✓
June 24	St-Jean-Baptiste						✓					
July 1	Canada Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
August	Civic Holiday		✓				✓	✓		✓		✓
September	Labour Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
October	Thanksgiving	✓					✓	✓	✓	✓	✓	✓
November	Remembrance Day	✓		✓	✓				✓	✓	✓	✓
December 25	Christmas Day	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
December 26	Boxing Day	✓						✓				

## Definitions and reference week (concluded)

to be effective: since it was introduced, statutory holidays have been reported more systematically.<sup>3</sup> Since 2001, the proportion of workers reporting hours lost for Thanksgiving has consistently been higher than at the end of the 1990s. For example, from 1997 to 2000, 38% to 40% of employees reported this holiday, compared with 47% to 49% now. Much of this increase is likely related to the implementation of the new system, but the hypothesis that it is partly attributable to factors related to the business cycle cannot be entirely ruled out. In a period of strong growth, such as in 1999, some workers may not take the day off because of a heavier workload. In a period of slower growth, such as in 2003, more employees may do so.

Some fixed-date vacation leave also has a major impact. For example, employees in the Quebec construction industry take their vacation each year during the last two full weeks of July. This is picked up sporadically by the LFS. In particular, it was captured in 2003 but not in 2000. This, then, was another factor accounting for the lower hours in 2003. Also, the school spring break is captured systematically in some provinces, sporadically in some, and never in others.

Main holidays<sup>1</sup> captured in the LFS

	Easter	Vacation for construction workers in Quebec	Thanks-giving	Remem-brance Day
1987	Friday	✓	✓	✓
1988			✓	✓
1989				Saturday
1990	Monday	✓		Sunday
1991		✓	✓	✓
1992	Friday	✓	✓	✓
1993	Monday		✓	✓
1994			✓	✓
1995	Friday		✓	Saturday
1996		✓	✓	✓
1997		✓	✓	✓
1998	Monday	✓	✓	✓
1999			✓	✓
2000			✓ <sup>2</sup>	Saturday
2001	Monday	✓	✓	Sunday
2002		✓	✓	✓
2003	Friday	✓	✓	✓
2004	Monday		✓	✓

1 Other holidays are Family Day in Alberta and school spring break, which is systematically captured in some provinces but never in others.

2 When the new computer-assisted interview system was introduced in 2000, respondents were not reminded that Thanksgiving and Remembrance Day fell in the reference week, causing hours lost for these holidays to be severely under-reported in the LFS.

(other than statutory holidays, which are excluded from the adjusted data) in the decrease in average actual hours.

**Increase in hours lost a major factor**

Hours lost explained two-thirds of the drop in hours (Table 1, after adjustment) instead of the 82% before adjustment. Usual hours explained the remaining third. On the other hand, overtime, which remained steady at 1.7 hours per week, slowed the decrease in hours.

Since the distribution of employees between full- and part-time has a major impact on hours worked, the identity was done separately for full- and part-time workers (Table 3). The decrease in adjusted average actual hours between 2000 and 2003 was much greater for full-time workers—0.7 hours on average per week after adjustment, compared with a marginal 0.1 for part-time workers.

A decomposition of the drop into the components of the identity for full-time and part-time employees confirms the importance of hours lost in the drop in average actual hours (Table 3, after adjustment), accounting for 85% and 153% respectively.

**Employees seeking a better balance between work and personal life**

When statutory holidays are excluded, the influence of other reasons for absence between 2000 and 2003<sup>13</sup> can be seen (Table 2, after adjustment). Among full-time employees, maternity leave accounted for the largest share of the increase in hours of absence—nearly one-third. This coincided with changes to Employment Insurance which, as of December 31, 2000, increased maternity, parental or adoption benefits from 30 to 50 weeks. (For further details, see Marshall 2003.) Hours of absence per female employee because of maternity leave rose from 0.6 hours per week<sup>14</sup> in 2000 to 0.9 hours in 2003.



**Table 2 Increase in hours lost by reason and full- or part-time status**

	2000	2001	2002	2003	2004	Total	Change, 2000 to 2003	
							Contribution	
							Before adjust- ment	After adjust- ment <sup>1</sup>

Source: Labour Force Survey

<sup>1</sup> The adjustment consists essentially of removing statutory holidays.

Again in the case of full-time employees, the second-ranking factor in the increase in hours of absence was vacation leave, which accounted for 23% of the increase. This is probably partly related to an aging workforce, as older workers are generally entitled to more leave; in fact, 70% of the increase in vacation leave was attributable to workers aged 45 and over.

By the same token, with inflation remaining at relatively low levels over the past several years, union demands have focused less on wages than on job protection (Fortin 2003) and on improvements to fringe benefits. Indeed, some employers use both

wages and employment conditions to attract the best workers (Akyeampong 2002).<sup>15</sup> The increase in vacation leave is probably also partly attributable to these new union demands, which are oriented more toward a better balance between work and personal life. The increase in leave for personal or family responsibilities—which, while more modest, nevertheless explained just over one-tenth of the overall increase in hours lost—is likely also part of this trend.

The increase in absences for ‘other’ reasons explained 17% of the increase in hours lost for full-time employees and reflects numerous disruptive events that



**Table 3 Components of actual hours worked for full- and part-time employees**

	2000	2001	2002	2003	2004	Change, 2000 to 2003		
						Total	Contribution	
							Before adjust- ment	After adjust- ment
								%
<b>Full-time</b>								
Usual hours	39.7	39.7	39.6	39.5	39.5	-0.2	11.2	23.6
Overtime	1.9	1.9	2.1	2.0	1.9	0.1	-4.3	-9.0
Hours lost	4.1	4.8	4.9	5.4	5.1	1.3	93.1	...
Adjusted hours lost	3.8	4.2	4.3	4.4	4.3	0.6	...	85.4
Actual hours	37.5	36.8	36.8	36.1	36.3	-1.4	100.0	...
Adjusted actual hours	37.7	37.4	37.4	37.1	37.1	-0.7	...	100.0
<b>Part-time</b>								
Usual hours	17.3	17.4	17.4	17.4	17.5	0.1	-22.0	-50.9
Overtime	0.5	0.5	0.5	0.5	0.5	0.0	-0.8	-1.8
Hours lost	1.6	1.9	1.9	2.0	2.1	0.4	122.8	...
Adjusted hours lost	1.6	1.7	1.8	1.8	1.8	0.2	...	152.7
Actual hours	16.2	16.1	16.0	15.9	15.9	-0.3	100.0	...
Adjusted actual hours <sup>1</sup>	16.2	16.2	16.1	16.1	16.1	-0.1	...	100.0

Source: Labour Force Survey

<sup>1</sup> Actual hours in this table are calculated using adjusted hours lost and do not correspond with those in Table 4.

occurred in 2003. Ontario was especially hard hit by the power blackout in August as well as the appearance of a number of SARS cases. For its part, British Columbia found itself in the grip of numerous forest fires and several floods, while Canadian businesses were forced to adjust to strong appreciation in the Canadian dollar.

The increase in time lost because of illness was also substantial, explaining 19% of the total increase in hours lost between the two years. Aging did not appear to be the only cause of the rise, at least for men, since only 36% of the increase in time lost because of illness was attributable to male workers aged 45 and over. For women, the figure was 70%.

For part-time employees, the increase in absences because of illness and for other reasons accounted for the lion's share of the increase in hours lost (72%). Not surprisingly, maternity leave, personal or family responsibilities, and vacations explained only 28% of the increase, since part-time employees are not widely covered for these types of leave.<sup>16</sup>

In summary, the increase in hours lost for full-time workers seems largely attributable to the increased presence of older workers, who have more fringe benefits. Also, workers in general appear to be assigning more value to employment conditions that favour a better balance between work and personal life, since the combined increase in maternity leave and leave for personal or family responsibilities accounts for more than 40% of the overall increase in hours lost. A major proportion of part-time employees have already by definition struck this balance, since for most of them, working part time is a matter of choice.<sup>17</sup>

#### Other factors

A regression model was used to examine factors such as the increased proportion of employees working part time, aging, region of residence (province and urban/rural area), the temporary nature of the job, student status, and occupation and industry in order to test their effects on the decrease in average actual hours worked.

**Table 4 Proportion of part-time employees and average actual hours**

	Average hours								
	Part-time workers			Full-time			Part-time		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	%			Hours					
1987	15.7	7.9	25.6	37.2	38.9	34.5	15.5	14.8	15.7
1988	15.9	8.1	25.7	37.9	39.7	35.1	15.6	15.1	15.8
1989	15.8	8.1	25.3	38.4	40.2	35.5	15.8	15.0	16.2
1990	16.2	8.6	25.5	37.8	39.6	35.1	15.7	14.9	16.0
1991	17.4	9.5	26.7	37.4	39.2	34.7	15.4	14.9	15.6
1992	17.6	9.8	26.8	36.8	38.8	34.0	15.3	14.9	15.5
1993	18.2	10.4	27.4	37.6	39.6	34.5	15.5	15.1	15.7
1994	18.0	10.1	27.4	38.0	40.2	34.8	15.7	15.2	15.9
1995	17.8	10.0	27.0	37.7	39.8	34.6	15.7	15.1	16.0
1996	18.1	10.0	27.5	38.0	40.2	34.9	15.9	15.3	16.1
1997	18.0	9.7	27.6	38.0	40.2	34.7	16.2	15.8	16.4
1998	17.6	9.6	26.9	37.5	39.7	34.4	16.4	16.0	16.5
1999	17.3	9.5	26.3	37.8	40.0	34.6	16.5	15.9	16.7
2000	17.2	9.6	25.9	38.0	40.2	35.0	16.5	16.0	16.8
2001	17.3	9.9	25.8	37.2	39.3	34.2	16.5	16.0	16.7
2002	17.8	10.2	26.3	37.1	39.3	34.1	16.3	16.1	16.4
2003	18.0	10.3	26.5	36.5	38.7	33.5	16.2	16.0	16.4
2004	17.7	10.2	26.0	36.8	39.2	33.6	16.2	16.0	16.3

Source: Labour Force Survey

Between 2000 and 2003, the proportion of employees working part time went from 17.2% to 18.0%. However, the proportion dipped to 17.7% in 2004. The increase in part-time work was greater for men, with their proportion rising from 9.6% to 10.3% in 2003 and 10.2% in 2004. For women, it rose from 25.9% in 2000 to 26.5% in 2003, then declined to 26.0% in 2004 (Table 4).

This increased propensity for part-time work accounted for 20%<sup>18</sup> of the drop in average hours, a sizeable share. Once again, it would be tempting to say that aging is a factor. For women, the increased propensity was more pronounced for the older age groups. For men, however, it was distributed among

most age groups. The explanation could therefore be a lack of full-time jobs, since a larger share of young men take part-time work by necessity. It could also be that some of these young men are students, making it impossible to rule out the hypothesis of an increased preference for a better balance between work and personal life.

Variables such as occupation and industry do little to explain the decline in hours. However, what little these variables add would seem to show that a small part of the decline in hours is attributable to some transfer of jobs from occupations and industries with relatively high hours to ones requiring fewer hours.

### Did the reference week bias have an effect in the past?

Since the degree of representation of statutory holidays in the reference week has a major impact on the trend in hours between 2000 and 2003, it is legitimate to ask whether such a bias occurred in the past. Hours actually worked were adjusted starting in 1987 (Chart D).

A comparison of adjusted and unadjusted hours shows that similar patterns occurred in the past. One of the most important took place in the early 1990s. In 1989 and 1990, few statutory holidays were captured by the LFS (see the second table in *Definitions and the reference week*).<sup>19</sup> The adjustment of hours actually worked therefore



## Labour force surveys in other countries

The United States Current Population Survey (CPS), like the LFS, collects monthly employment data for a reference week. Reference-week biases are therefore also unavoidable. However, CPS reference weeks are chosen to avoid most statutory holidays except Easter. As a result, annual hours worked are considerably overestimated. As part of a research project to compare productivity changes, Statistics Canada made similar statutory holiday adjustments to the American data. Because of the greater overestimation in the United States, the changes in their figures were larger.

## Average annual hours in Canada and the U.S.

	Unadjusted hours		Adjusted hours		Gap	
	Canada	United States	Canada	United States	Canada	United States
						%
1994	1,814.8	1,945.1	1,768.4	1,856.4	2.6	4.6
1995	1,799.2	1,952.3	1,766.5	1,850.9	1.8	5.2
1996	1,814.8	1,950.6	1,778.9	1,865.8	2.0	4.3
1997	1,814.8	1,965.9	1,774.8	1,870.0	2.2	4.9
1998	1,799.2	1,956.8	1,774.0	1,873.4	1.4	4.3
1999	1,814.8	1,975.8	1,777.1	1,878.0	2.1	4.9
2000	1,825.2	1,954.3	1,773.5	1,889.2	2.8	3.3
2001	1,788.8	1,928.0	1,762.1	1,876.3	1.5	2.7
2002	1,778.4	1,957.8	1,745.0	1,867.3	1.9	4.6

Ideally, a weekly labour force survey would provide better estimates, with no reference-week bias. New surveys in the European Union use such an approach. The surveys use reduced samples that cover each week. Monthly estimates are then produced. This approach obviously entails major changes in methodology and operations, as well as presentation of the data. (For more information, see *The European Union labour force survey*, published June 2005 by Eurostat and available on their Web site.)

had little effect during these years. Starting in 1990, the economic slowdown was apparent; hours (adjusted or otherwise) decreased substantially. In 1992, several statutory holidays were captured by the LFS (Good Friday, Thanksgiving and Remembrance Day).<sup>20</sup> The adjustment of actual hours therefore had more of an effect in 1992, significantly raising the number of hours worked. Unadjusted actual hours between 1990 and 1992 indicate a much larger drop than the adjusted hours.

Subsequently, from 1994 to 1999, adjusted and non-adjusted hours increased substantially and at the same pace. Starting in 2000, growth was slower, for both adjusted and non-adjusted hours. (For a description of the methodology used by the United States and the European Union, see *Labour force surveys in other countries*.)

## Impact of hours on productivity

The reference week bias in hours actually worked affects not only the reading of labour market indicators but also labour productivity, since the latter reflects production per hour actually worked. Unless LFS hours are

adjusted for various captured and non-captured holidays, the productivity measure would indicate spurious changes and would give an erroneous measure of economic efficiency. For this reason, before productivity is calculated, several adjustments are made to hours actually worked (see *Adjustments made by the Canadian Productivity Accounts* and Maynard 2004).

The adjusted hours are usually lower than non-adjusted hours (Table 5). The difference may amount to as much as 12.4 days annually (1989). Adjusted annual hours also fluctuate much less. For example, between 1987 and 2004, they ranged between -1.1% and 0.8% compared with -2.0% to 1.5% for unadjusted hours.

The effect of using unadjusted hours in calculating productivity was also measured. Taking unadjusted hours as the denominator, labour productivity in 2001 would be overestimated by 1.5%. This overestimation would amount to an average of 0.9% per year between 2000 and 2003 and 0.6% between 1989 and 1993. However, over the long term (1987 to 2004), the effect is marginal (0.1%).

## Conclusion

Between 2000 and 2003, the LFS estimate of annual average hours of work gradually declined by 70 hours, or the equivalent of two weeks of work. This decline was surprising, since employment continued to be uncommonly strong despite slower economic growth than in the late 1990s. This strength contrasted with the stagnation of employment in the United States. Some analysts therefore questioned the strength of the labour market during these years.



## Adjustments made by the Canadian Productivity Accounts

The Canadian productivity accounts adjusts hours aggregated by industry and class of worker, using more steps than in this article.

In the LFS, the annualization of hours consists primarily of summing the hours for the 12 reference weeks. In the productivity accounts, hours are adjusted in four steps. A first adjustment neutralizes the effect of the holidays on reference weeks by adding hours of absence to actual hours. Next, a linear interpolation of the 'standardized' hours of reference weeks is done to produce estimates for all the weeks of the year. Then estimates are produced of the hours of absence related to statutory holidays and some vacations during weeks other than survey reference weeks for all employed persons, for all their jobs. These hours of absence are then subtracted from the 'standardized' actual hours. These adjustments give a better estimate of hours actually lost because of statutory holidays, since they add back the hours that should not have been subtracted and deduct hours actually lost annually for all the statutory holidays in each province.

Hours are also adjusted for vacations, since in some provinces, reference weeks coincide with vacations in particular industries, such as the construction industry in Quebec. A final adjustment is made to account for the day of the week that a calendar year starts.

This yields the hours actually worked for each of the 52 weeks of the year for all employed persons at all their jobs. These adjusted totals are published in *The Canadian Productivity Accounts* of Statistics Canada. Thus, data are available on the hours of self-employed workers and employees by province or territory for a detailed industry level. For more information, see Maynard 2004 and Statistics Canada 2005.

More than half of the decrease was in fact due to survey methodology. The under-representation of some statutory holidays led to an overestimate of annual average hours worked in 2000 and thus, by comparison, an exaggerated drop in hours in the next three years. Similar patterns have occurred previously, notably between 1989 and 1992.

Once adjusted to eliminate the statutory holiday bias, the decline amounted to an average of one week annually per employee instead of two. Two-thirds of the decrease in adjusted hours came from an increase in hours lost for other than statutory holidays. This increase in hours lost was attributable to the aging of the workforce, since a major portion of the increase was seen among workers aged 45 and over.

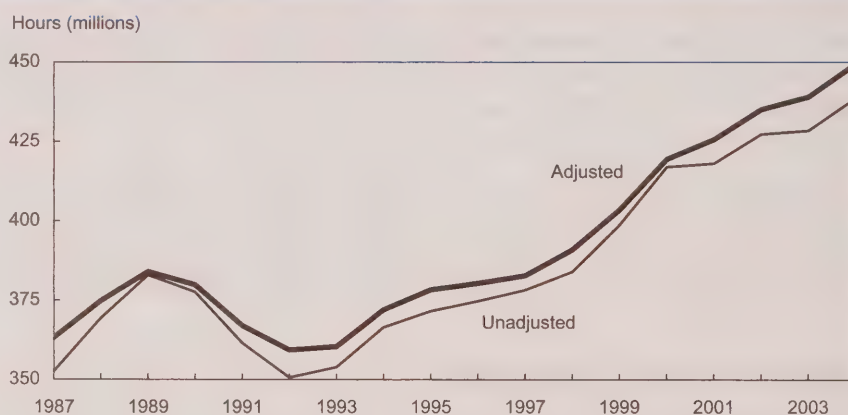
However, aging was not the only factor. Increases in time off for vacation and for personal or family responsibilities, as well as changes to EI that resulted in more weeks of maternity, parental and adoption benefits as of December

31, 2000, also contributed, reflecting the greater value assigned to a better balance between work and personal life. The increased propensity to work part time, which was more pronounced among men in all age groups, could also be seen as reinforcing this trend.

In addition, 2003 was disrupted by several unfortunate events: the August power blackout in Ontario, concerns about a possible SARS epidemic, and forest fires and floods in British Columbia. Combined with the substantial appreciation of the Canadian dollar, these events led to an increase in work absences for other reasons, which accounted for nearly one-fifth of the total increase in hours lost.

Thus the decrease in adjusted hours did not seem to reflect a lack of economic vitality, but rather the aging of the workforce and the greater value assigned to a better balance between work and personal life.

**Chart D Removing the statutory holiday bias reduces the fluctuation in annual work hours.**



Source: Labour Force Survey, 1987 to 2004

**Table 5 Average annual hours per employee, before and after adjustment, and effect of adjustment on labour productivity<sup>1</sup>**

	Hours		Difference in		Actual hours growth		Effect on labour productivity <sup>3</sup>
	Unad-justed	Adjusted	Annual Hours	Days	Unad-justed	Adjusted	
						%	
1987	1,804.4	1,767.9	36.5	4.9	...	...	...
1988	1,830.4	1,771.4	59.0	7.9	1.4	0.2	-1.2
1989	1,856.4	1,763.6	92.8	12.4	1.4	-0.4	-1.9
1990	1,830.4	1,753.3	77.1	10.3	-1.4	-0.6	0.8
1991	1,794.0	1,733.7	60.3	8.0	-2.0	-1.1	0.9
1992	1,768.0	1,735.3	32.7	4.4	-1.4	0.1	1.5
1993	1,788.8	1,738.3	50.5	6.7	1.2	0.2	-1.0
1994	1,814.8	1,745.3	69.5	9.3	1.5	0.4	-1.1
1995	1,799.2	1,746.0	53.2	7.1	-0.9	0.0	0.9
1996	1,814.8	1,759.5	55.3	7.4	0.9	0.8	-0.1
1997	1,814.8	1,754.2	60.6	8.1	0.0	-0.3	-0.3
1998	1,799.2	1,753.7	45.5	6.1	-0.9	0.0	0.8
1999	1,814.8	1,759.2	55.6	7.4	0.9	0.3	-0.6
2000	1,825.2	1,754.3	70.9	9.5	0.6	-0.3	-0.9
2001	1,788.8	1,745.0	43.8	5.8	-2.0	-0.5	1.5
2002	1,778.4	1,732.1	46.3	6.2	-0.6	-0.7	-0.2
2003	1,747.2	1,725.5	21.7	2.9	-1.8	-0.4	1.4
2004	1,762.8	1,742.0	20.8	2.8	0.9	1.0	0.1
1989 to 1993 <sup>2</sup>	1,808.0	1,745.0	63.0	8.4	-0.9	-0.4	0.6
2000 to 2003 <sup>2</sup>	1,784.2	1,738.9	45.3	6.0	-1.5	-0.6	0.9
1987 to 2004 <sup>2</sup>	1,800.8	1,748.5	52.3	7.0	-0.1	-0.1	0.1

Sources: Labour Force Survey; Micro-economic Studies and Analysis Division

<sup>1</sup> The adjustments are for various provincial holidays and for the vacation of construction workers in Quebec.

<sup>2</sup> Geometric mean of the average annual growth rate of adjusted and unadjusted hours in 2000 and 2003.

<sup>3</sup> This column looks at the overestimation or underestimation of labour productivity if actual hours are not adjusted. For example, between 2000 and 2001, productivity growth would have been overestimated by 1.5% if unadjusted hours had been used instead of adjusted ones.

Nonetheless, unless adjusted, the LFS estimate of hours actually worked often introduces a bias that can distort interpretation of labour market conditions. A comprehensive adjustment is produced regularly at Statistics Canada in the Canadian Productivity Accounts program. The Current Population Survey, the American counterpart of Canada's LFS, uses virtually identical procedures, so their estimates also contain a reference-week bias. On the other hand, new labour force surveys by nations in the European Union gather their data weekly from reduced samples, nullifying this bias.

## ■ Notes

1 This is the definition of usual hours used since January 1997. Prior to that, usual hours included any overtime hours usually worked by the survey respondent during a normal workweek, regardless of whether those hours were remunerated. Usual hours are used to calculate hourly wage rates.

2 Actual hours are used to calculate productivity and the hourly cost of labour.

3 In 2000, the system was new, and messages reminding respondents of the Thanksgiving and Remembrance Day holidays did not function. As a result, the LFS greatly underestimated the hours lost that year because of these holidays.

## Perspectives



4 Self-employed workers report only absences of one week or more. Employees additionally report absences for part of a week. In this article, total hours lost cover both types of absence. Therefore, self-employed workers are excluded.

5 It is important to distinguish between average hours per employee and total hours. Total hours continued to grow between 2000 and 2003, since employment increased. However, they grew less rapidly, and hence the decrease in average hours.

6 Other reasons include time lost because of weather, strikes, lockouts, temporary layoffs, job starting or ending during the week, lack of material, or maintenance and repair of work premises.

7 Hours lost are annualized by multiplying weekly hours by 52 and by dividing the result by 7.5 hours per day.

8 From January to October, the LFS reference week includes the 15th day of the month. In December, the reference week is moved ahead to avoid having interviews take place during the weeks prior to Christmas. The same is usually done for November so that at least three weeks will separate the November and December interviews (David 1989).

9 Some holidays occur on a fixed date (Christmas, New Years Day, Remembrance Day) while others are variable (Civic Holiday, Good Friday). Some workers are penalized when fixed-date holidays fall on a weekend.

10 Not all workers are given this holiday, but most provincial and federal employees are. (See second table in *Definitions and reference week*.)

11 For further details, see *Definitions and reference week*.

12 The adjustment consisted of adding hours lost for statutory holidays to actual hours of work. An additional adjustment was made for 2000, when the LFS reference week did not take place during the vacation of construction employees in Quebec, whereas in 2003, those vacation weeks were captured. In this case, the hours lost to vacation are estimated on the basis of usual hours. The average actual hours thus adjusted are slightly overestimated, since hours lost to statutory holidays are considered as having been worked, whereas in reality, this is not the case. However, this adjustment eliminates the bias caused by the reference week, and the numbers of hours may therefore be compared without risk of error.

13 The years 2000 and 2003 represent the peak and trough respectively of average actual hours. The rest of the article examines differences between these two years to explain the decline in hours.

14 Only women can report hours of absence owing to maternity leave. Men can take parental leave, which is captured in leave for personal or family responsibilities.

15 Some laws have reinforced this effect, such as the Quebec legislation that gradually lowered the standard workweek from 44 hours in 1998 to 40 hours in 2002. A similar regulation in Ontario established a ceiling of 48 hours, including overtime.

16 An Oaxaca decomposition model was used to see whether the increase in hours lost was more concentrated in specific industries and occupations or the result of a transfer of employment from some industries and occupations with low levels of hours lost toward industries and occupations with high levels. However, the model showed that the increase was broadly based. The decomposition was done by estimating a linear regression model with the average number of hours of absence per week as the dependent variable and the following independent variables: age group, sex, temporary employee status, student status, province of residence, rural/urban area, occupation and industry.

17 The proportion of employees working part time by choice was more than 70% in 2000 and in 2003.

18 This estimate of 20% was obtained through a series of ordinary least squares regressions in which the dependent variable was an average of the number of adjusted actual hours for the years 2000 and 2003 combined. In the first regression, a single dependent variable was used, namely a dichotomous variable taking the value 1 in the case of data for 2003 and 0 otherwise. In a second regression, the proportion of part-time employees was added. The coefficient of the dichotomous variable then declined by 20%, meaning that the growing proportion of part-time employees explains 20% of the decrease in hours. The third regression included the variables in the second regression as well as province and the rural/urban nature of the area of residence. A fourth regression included all variables in the third regression as well as occupation and industry, the temporary or non-temporary nature of the job, and student status. The coefficient for Model 5 was -0.54, or 31% less than that of the first model, which shows that adding all the variables in models 3, 4 and 5 managed to add only about 10 percentage points more than Model 2 to explaining the drop in hours.

19 In 1989 and 1990, the only holiday captured was Remembrance Day. Also, this holiday fell on the weekend in both these years. When Remembrance Day falls on the weekend, it often has less impact on hours lost, since eligible employees would carry the holiday over to the following Monday.



20 In 1992, Remembrance Day fell on a weekday. Also, the July reference week took place during the vacation period for Quebec construction workers, reducing actual hours for that month.

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# How Canada compares in the G8

Katherine Marshall

France initiated the first G6 (Group of Six) meeting in 1975, inviting five countries to discuss current global economic issues. Today, eight countries rotate hosting an annual summit to discuss not only the global economy, but also political and social problems (see *History of the G8*). The G8—Canada, France, Germany, Italy, Japan, the Russian Federation, the United Kingdom and the United States—are some of the most industrialized countries in the world. Given their economic, political and military weight, they can influence global developments and manage global crises. Using labour and economic data from the Organisation for Economic Co-operation and Development (OECD), the World Trade Organization, and other international databases, this article presents selected indicators to describe how Canada compares with the other members of the G8, indicating changes since the early 1990s (see *Data sources and definitions*).

## Small group, big economic power

Given Canada's population, it is somewhat of a feat to belong to the G8, where membership is contingent on being a major economic power. In fact, the eight countries account for only 13% of the world's population, but 46% of the global economy (Table 1). In other words, these eight countries are responsible for almost half the value of goods and services produced around the world.

The economic strength of the United States is clearly evident, with a share of world GDP (21.0% in 2004) almost five times greater than its proportion of world population (4.6%). Despite being the smallest G8 country, Canada's share of GDP (1.8%) in 2004 was 3.6 times greater than its share of population, a ratio only slightly below the United Kingdom's. These proportional differences in GDP and population translate into the highest GDP per capita figures for the

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## History of the G8

The G8 has its roots in the early 1970s with two precursor groups known as the Brussels Group (1971) and the Library Group (1973). Both included selected developed democratic countries that met to discuss world issues, but meetings were largely confidential. One year after the Library Group was formed (France, Germany, the United Kingdom, and the United States), Japan joined. Subsequently, the group developed into the 'G6' when President Giscard d'Estaing of France invited the 'G5' plus Italy to Rambouillet to discuss global economic problems. Canada joined in 1976 to make the G7, and Russia in 1998 to make the G8.

The G8 does not have a permanent administration. Each of the former G7 countries rotates holding a year-long presidency and hosting a summit. Canada has hosted four summits—in Ottawa and Montebello (1981), Toronto (1988), Halifax (1995) and Kananaskis (2002)—and is scheduled to host again in 2010. Russia will host for the first time in 2006.

At each summit, leaders from the countries meet to discuss major global issues of the day—economic, political or social. For example, the main issues for the 2005 summit will include Africa and climate change. Representatives from all countries try to reach non-binding agreements on how to resolve problems. The G8 has been responsible for instigating the Global Health Fund (targeted at fighting AIDS, tuberculosis and malaria), the Heavily Indebted Poor Countries Initiative (which sets out a process to cancel the national debt for very poor countries), and the New Partnership for Africa's Development.

United States, the United Kingdom and Canada—\$39,800, \$31,100 and \$31,000 respectively in 2004. Standardized per capita GDP gives an indication of relative economic well-being. Even though Russia had by far the lowest GDP per capita in the G8 (\$10,000), it was still almost twice as high as the average for all non-G8 countries (\$5,400).

## Canada had the highest rate of economic expansion between 2000 and 2004

Canada's GDP grew by 1.2% annually between 1990 and 1994, 3.7% between 1995 and 1999, and 3.1% between 2000 and 2004, placing it sixth, second and



**Table 1 Population and GDP<sup>1</sup> of the G8, 2004**

	Population		GDP		GDP per capita
	millions	%	US \$ (billions)	%	US \$
<b>World</b>	<b>6,379.2</b>	<b>100.0</b>	<b>55,500</b>	<b>100.0</b>	<b>8,700</b>
<b>G8</b>	<b>857.8</b>	<b>13.4</b>	<b>25,516</b>	<b>46.0</b>	<b>29,744</b>
United States	293.0	4.6	11,665	21.0	39,807
United Kingdom	60.3	0.9	1,877	3.4	31,142
Canada	32.5	0.5	1,007	1.8	30,971
Japan	127.3	2.0	3,835	6.9	30,115
France	60.4	0.9	1,804	3.3	29,859
Germany	82.4	1.3	2,310	4.2	28,025
Italy	58.1	0.9	1,610	2.9	27,730
Russia	143.8	2.3	1,408	2.5	9,793
<b>Non-G8</b>	<b>5,521.3</b>	<b>86.6</b>	<b>29,984</b>	<b>54.0</b>	<b>5,431</b>

Sources: *The World Factbook*; *OECD Main Economic Indicators*

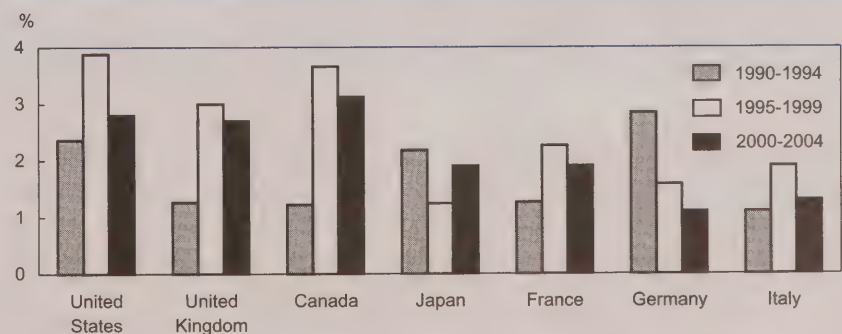
1 A purchasing power parity (PPP) dollar calculation of all goods and services produced in a country.

first in the three periods<sup>1</sup> (Chart). Most countries followed this global recession and recovery pattern, with the lowest economic growth between 1990 and 1994 and the greatest between 1995 and 1999. Germany, however, had the highest growth rate in the G7 countries between 1990 and 1994<sup>2</sup> (2.8%) but saw consecutive reduced rates of 1.6% and 1.1% in the next two periods. This was partly due to the disruption following the fall of the Berlin Wall in 1989 and the subsequent blending of wealthier West Germany and former communist East Germany. France, Italy and Japan have all had relatively weak performances since 1990 (GDP growth rates of 2.3% or less). The United States was among the top three countries in terms of GDP growth rate for all three periods.

### Export trade accounts for one-third of Canada's GDP

An important factor in economic expansion for many countries is the amount of international trade activity. This is especially important

for a country like Canada, which has a relatively small domestic market. Many countries began to formally harmonize their trade practices with the General Agreement on Tariffs and Trade in 1948, and the creation of the World Trade Organization in 1995. Trade is also becoming increasingly important to many large non-G8 countries such as China (see *Emerging markets*). Canada has participated in a flurry of liberalized trade agreements during the past 15 years, including the 1989 Canada-U.S. Free Trade Agreement, the 1994 North American Free Trade Agreement, and the soon-to-be-adopted 2005 Free Trade Area of the Americas (covering 34 countries). The increase in free trade (the reduction or elimination of trade barriers such as tariffs or quotas), technological advances in communication, lower transportation costs, and innovation have all profoundly changed how and where business is done. Increasingly, the world of doing business has come to mean doing business with the world.

**Chart Canada's average growth in GDP improved markedly after the early 1990s.**

Source: *OECD Productivity Database*  
Russia excluded, data for unified Germany began in 1991.



## Data sources and definitions

This article uses figures from several organizations that regularly collect and publish standardized international data. However, whereas the Central Intelligence Agency (CIA) and the World Trade Organization (WTO) seek to cover almost all countries in the world, the Organisation for Economic Co-operation and Development (OECD) generally focuses on its 30 member countries—which include all the G8 countries except Russia. The OECD nonetheless attempts to include economic and labour market indicators for several significant non-member countries, such as Russia, but readily admits that the data collection process is less well-established in non-member countries and therefore “time series are generally not very long, and are less reliable” (OECD 2005b, p 225). For Germany, data prior to 1991 are only for West Germany (Federal Republic of Germany). Information and the data used in this article can be obtained from the following Web sites:

OECD: [www.oecd.org](http://www.oecd.org)

WTO: [www.wto.org](http://www.wto.org)

World Fact Book (CIA): [www.odci.gov](http://www.odci.gov)

U.S. Bureau of Labor Statistics: [www.bls.gov](http://www.bls.gov)

The article presents many well-known labour market and economic indicators. However, many other indicators could have been used—for example, youth unemployment, long-term unemployment, income distribution, the consumer price index, interest rates, or the national debt.

Although all the organizations mentioned above are diligent in attempting to standardize concepts, methods and definitions in order to allow for international comparisons, some differences will exist nonetheless. Therefore, some caution must be taken when interpreting individual year differences between countries, and small differences in particular should be considered as “falling in a margin of uncertainty” (OECD 2005a, p 11). For examples of some of the work done on international comparisons, see Baldwin et al. 2005 and OECD 2005a.

Real **gross domestic product** (GDP) is commonly used to estimate total economic activity, after adjusting for inflation, and is therefore a good measure for determining how well an economy is doing.

**Purchasing power parity** (PPP) is the rate at which currency of one country must be converted into currency of another country to buy an equivalent basket of goods

and services. PPPs eliminate the differences in price levels among countries and therefore fluctuate much less than market exchange rates. The common currency used in this article is the U.S. dollar. The OECD uses regularly updated PPPs developed by the OECD-Eurostat PPP program.

**Merchandise trade** is the buying (importing) and selling (exporting) of all types of goods, which can range from raw primary products to specialized manufactured products. Trade in services is excluded since it is a relatively small activity and the coverage and comparability across countries are subject to significant distortions ([www.wto.org](http://www.wto.org)).

The **labour force** is the civilian, non-institutionalized population over a country-specific minimum age (15 in Canada) who at the time of the survey were employed or unemployed.

**Employment rate** is the percentage of the working-age population that is employed. For example, the rate for the core working-age population would be the number of persons aged 25 to 64 who are employed divided by the total population that age.

**Educational attainment** is a standardized set of indicators summarizing the highest level of education attained. The OECD codes education levels according to the International Standard Classification of Education, which allows for international comparison. A common sub-classification is:

*Below upper secondary:* less than a high school diploma.

*Upper secondary and postsecondary non-tertiary:* graduation from high school or completion of a postsecondary program that generally lasts six months to two years. Program names include trade/vocational certificate and community college certificate.

*Tertiary:* includes higher level vocational and technical programs that usually last 1.5 to 3 years and result in a college diploma, and university certification programs (diploma, bachelor's degree, first professional degree, etc.).

For more information, see [www.oecd.org/edu/eag2004](http://www.oecd.org/edu/eag2004).

The importance of external trade to the economy is shown by the \$US 322 billion in goods that Canada exports. This represented almost one-third (32%) of GDP (Table 2). An increase in exports means more economic activity for a country, and all G8 members have witnessed such an increase since 1990. At 252%, Canada had the greatest increase in export trade over the past decade. Total merchandise exports tended to be less important (18% of GDP or less) for the larger countries (Japan, Russia and the United States). After

three years of consecutive decreases, Canada's exports increased by just over \$US 49 billion in 2004 (data not shown), resulting in a record trade balance of \$US 46 billion. Increases in industrial goods and energy products were particularly strong, as was the extent of export trade with the United States, despite the appreciation of the Canadian dollar<sup>3</sup> (Department of Foreign Affairs and International Trade 2005; Cross 2005).

**Table 2 Indicators for total merchandise trade among the G8, 2004**

	Imports	Exports	Trade balance <sup>1</sup>	Export trade	
				Share of GDP <sup>2</sup>	Growth since 1990
	Current US \$ (billions)			%	
United States	1,526.4	819.0	-707.4	7	208
United Kingdom	462.0	345.6	-116.4	18	187
Canada	275.8	322.0	46.2	32	252
Japan	454.5	565.5	111.0	15	197
France	464.1	451.0	-13.1	25	208
Germany	717.5	914.8	197.3	40	217
Italy	349.0	346.1	-3.0	21	203
Russia	94.8	183.2	88.4	13	

Source: World Trade Organization

<sup>1</sup> Exports minus imports.<sup>2</sup> For comparability with the trade data, GDP is expressed in current US dollars.

### Canada has an aging but well-educated labour force

Employment growth is often linked to increases in economic activity and the qualifications of the population. One indicator that is widely used to track the state of the economy is the employment rate—the percentage of the working-age population that is employed. Trends in the rate for those aged 25 to 64 (the core working-age population) among the G8 are remarkable in both consistency and extent. The overall employment rate between 1976 and 2003 rose substantially in Canada (9.1 percentage points) and the United States (6.9 points), while it dropped slightly in two countries: France and Germany (Table 3). These changes result from varying decreases for men and increases for women, reflecting the almost universal increase in women's labour force participation, and a younger average retirement age for men.

While Italy had the largest employment rate difference between the sexes in 2003 (27.8 percentage points), Canada had the smallest (9.7 points)—largely because Canadian women had the highest employment rate (68.5%) of all G8 countries. Between 1976 and 2003, Canada moved from sixth to third in terms of the overall employment rate.

As mentioned, employment growth is also generally associated with increasing educational qualifications—which are more pertinent than ever in today's global and technological economy. And indeed, more and more people in each G8 country have been acquiring higher levels of education (Table 4). In 2002, 43% of Canada's population aged 25 to 64 had a high-level vocational diploma, college diploma or university degree—the highest rate in the G8 (see *Data sources and definitions*). Over one-third of this age group in Japan (36%) and the United States (38%) had also attained a tertiary or high level of education.

The employment rate among those with advanced education was 80% or higher in all G8 countries in both 1991 and 2002 (Table 4). In contrast, employment rates ranged between only 50% and 67% for those with less than high school education in both years. Given the correlation between advanced education and employment, it is not surprising to find that the four countries with the most highly educated populations (Canada, Japan, the United Kingdom and the United States) also had the highest overall employment rates in 2003 (Tables 3 and 4).

**Table 3 Employment rates in the G7**

Age 25 to 64	1976	2003	Change
<b>Both sexes</b>	%		
United States	64.3	71.2	6.9
United Kingdom	70.3	74.2	3.9
Canada	64.2	73.3	9.1
Japan	69.1	73.9	4.8
France	66.0	63.0	-3.0
Germany <sup>1</sup>	65.6	65.4	-0.2
Italy	52.2	57.1	4.9
<b>Men</b>			
United States	79.3	76.9	-2.4
United Kingdom	86.7	81.0	-5.7
Canada	80.7	78.2	-2.5
Japan	87.8	86.7	-1.1
France	81.8	69.2	-12.6
Germany <sup>1</sup>	83.4	71.4	-12.0
Italy	76.6	71.0	-5.6
<b>Women</b>			
United States	49.8	65.7	15.9
United Kingdom	54.0	67.4	13.4
Canada	47.7	68.5	20.8
Japan	51.0	61.0	10.0
France	50.3	56.9	6.6
Germany <sup>1</sup>	48.6	59.3	10.7
Italy	29.0	43.2	14.2

Source: OECD on-line Labour Statistics Database

<sup>1</sup> Only West Germany in 1976.



**Table 4 Selected labour market indicators of the G7 for those aged 25 to 64**

	United States	United Kingdom	Canada	Japan	France	Germany	Italy
<b>Educational attainment<sup>1</sup></b>							
1991					%		
Below upper secondary	16	35	30	..	49	18	72
Upper secondary and postsecondary	54	49	42	..	36	60	22
Tertiary	30	16	28	..	15	22	6
2002							
Below upper secondary	13	16	17	16	35	17	54
Upper secondary and postsecondary	49	57	40	47	41	60	36
Tertiary	38	27	43	36	24	23	10
<b>Employment rate by educational attainment</b>							
1991							
Below upper secondary	52	61	55	..	58	51	54
Upper secondary and postsecondary	74	78	75	..	78	74	74
Tertiary	85	86	82	..	85	86	87
2002							
Below upper secondary	57	53	55	67	58	51	50
Upper secondary and postsecondary	74	79	76	74	77	70	72
Tertiary	83	88	82	80	83	84	82
<b>Overall unemployment rate</b>							
1993	6.9	10.0	11.4	2.5	11.1	7.7	10.1
1998	4.5	6.2	8.3	4.1	11.1	9.1	11.7
2003	6.0	5.0	7.6	5.3	9.4	9.6	8.6
<b>Average actual hours worked per week</b>				Hours			
1993	35.1	33.1	33.0	36.6	30.5	29.6	31.2
1998	35.4	33.3	33.7	35.4	29.7	28.6	31.2
2003	34.5	32.2	33.0	34.6	27.5	27.8	30.6

Source: OECD

<sup>1</sup> Levels have been classified according to an international coding system.

Note: The selection of years was largely based on what was currently available from the OECD.

Unemployment rates in the G8 ranged between 3% and 12% from 1993 to 2003, with Canada near the middle of the pack (7.6% in 2003). However, average work hours trended down in all countries except Canada, which had an average of 33 hours per week in both 1993 and 2003. Since 1993, Japan has witnessed an average workweek reduction of 2 hours, from 36.6 to 34.6, but still had the longest workweek of the G8 in 2003. France, on the other hand, had the shortest, dropping three hours to 27.5. Reasons for a drop in average work hours include legislative change (France<sup>4</sup>), an aging labour force, and an increase in part-time work (see Galarneau 2005).

Finally, Canada's aging labour force has been the focus of a great deal of discussion, but in reality we are simply catching up to the older age distribution of workers in the other G8 countries. Only one-third of the Canadian workforce was aged 40 or over in 1983, compared with one-half in 2003 when the proportion in the other G8 countries ranged from 46% to 57% (Table 5). After 1983, Canada and the United States saw substantial increases (15 and 13 percentage points respectively) in the proportion of the workforce 40 and older, mostly because of the aging of the generation born after the Second World War. An aging labour force is not a concern in itself, having more to do with the impact of this demographic bulge as it moves out of the labour market, including possible skill shortages.<sup>5</sup>



## Manufacturing output and cost both relatively low in Canada

Cross-country labour output and cost indicators are usually developed using the manufacturing sector because data are readily available and because the industry often includes the bulk of a country's merchandise trade (Sharpe 1990). Data are converted into a common currency (U.S. dollars), and indexed to gauge the rate of change. Labour productivity is expressed as output per hour—that is, total GDP in manufacturing divided by total hours worked in the industry.<sup>6</sup> Productivity rates (1992=100) have increased in all G8 countries over the past decade (Table 6). The United States showed the largest increase between 1992 and 2003 (80%) and Italy the smallest (10%). Canada had a below-average growth in labour productivity (35%).

On the other hand, the hourly compensation for employees also increased in all countries, with the U.S. showing the greatest gain (60%) and Italy the least (1%). Canada had the second lowest hourly compensation gain (13%).

Conversely, except for the United Kingdom and Italy, the unit labour cost, which is wages and benefits per unit of manufactured product, fell in all countries between 1992 and 2003, particularly Canada and France where the drop was almost 20%. Since labour is often the biggest factor in production cost, lower unit labour costs can improve a country's position. Although it seems contradictory to have hourly compensation rates go up at the same time as unit labour costs go down, this is possible when labour productivity

increases. Specifically, when more goods can be produced in fewer hours, as was the case between 1993 and 2003, both wages and profits can increase.

**Table 5 Proportion of labour force aged 40 or over in the G7**

	1983	2003
	%	
United States	38	51
United Kingdom	42	49
Canada	34	49
Japan	52	57
France	41	50
Germany	45	53
Italy	42	46

Source: OECD

## Emerging markets

China, India and Brazil are three of the most populated countries in the world, and their economies and international trade activity have been growing almost exponentially. China alone has had an annual average growth of 9.3% in real GDP since 1993, with GDP totalling \$US 1,600 billion in 2004. However, GDP per capita in these three countries is still relatively low at \$US 1,230, \$US 610 and \$US 3,030 respectively for China, India and Brazil. Although Canada's total trade activity with these three (\$US 28.1 billion) represented only 4.7% of its trade activity worldwide in 2004, the figure is expected to grow, especially for China (Roy 2005).

### Economic indicators of emerging markets,<sup>1</sup> 2004

	China	India	Brazil
Population (millions)	1,299	1,065	184
GDP (\$ billions)	1,601	655	558
GDP per capita (\$)	1,232	615	3,033
Annual average GDP growth rate, 1993 to 2003 (%)	9.3	6.1	2.6
Total merchandise trade with Canada (\$ billions)	23.6	1.8	2.7
Canadian exports (\$ billions)	5.1	0.8 <sup>2</sup>	1.1
Canadian imports (\$ billions)	18.5	1.0 <sup>2</sup>	1.6

Sources: Department of Foreign Affairs and International Trade; Statistics Canada

<sup>1</sup> Currency figures are in U.S. dollars.

<sup>2</sup> 2003 data.

## Conclusion

Labour and economic data for the G8 demonstrate that this group includes some of the most economically powerful countries in the world. Their economic expansion has been continuous over the past 15 years, and the extent of their economic power is reflected in the 2004 average GDP per capita figure of \$US 29,700, compared with \$5,400 for non-G8 countries.

Canada has made significant gains in average annual economic expansion, moving from one of the lowest rates in the early 1990s to the highest during the most recent period (2000 to 2004). International trade has played a key role in this process.

**Table 6 Selected manufacturing output and cost indicators for the G7**

1992=100		United States	United Kingdom	Canada	Japan	France	Germany	Italy
		US \$						
Output per hour	1993	102.7	103.8	105.8	101.7	101.0	101.8	101.2
	1998	130.2	108.4	117.7	121.2	127.9	122.0	110.8
	2003	180.4	134.9	134.5	154.3	158.0	135.1	110.9
Hourly compensation	1993	102.0	88.9	95.6 <sup>1</sup>	117.2	96.3 <sup>1</sup>	100.4	82.8
	1998	118.7	115.4	91.9 <sup>1</sup>	111.7	101.1 <sup>1</sup>	113.3	86.7
	2003	159.6	148.4	112.7 <sup>1</sup>	135.3	127.0 <sup>1</sup>	132.8	100.8
Unit labour costs	1993	99.3	85.6	90.4	115.3	95.3	98.7	81.8
	1998	91.2	106.5	78.1	92.2	79.1	92.9	78.2
	2003	88.5	110.0	83.8	87.7	80.4	98.3	90.9

Source: U.S. Bureau of Labor Statistics

<sup>1</sup> Compensation adjusted for employment taxes and government subsidies to estimate the actual labour cost to employers.

Canada also fared well in terms of employment rate growth among the working-age population as well as in the educational attainment of this age group. By 2003, Canada had the third highest employment rate (73.3%) for those aged 25 to 64, up from 64.2% and sixth place in 1976. Also, Canadian women had the highest rate (68.5%) in the G8. Canada and the United States experienced a considerable baby boom after the Second World War and are currently facing a rapidly aging workforce, a situation that could affect labour replacement rates.

Although Canada has managed to control rising labour costs over the past decade and add to its competitive edge, its labour productivity gains have been substantially below those of France, Japan and the United States. However, all in all, the global economic picture indicates that Canada is keeping up with, and in many cases surpassing, its G8 partners.

### Perspectives

#### Notes

1 Canada's annual average GDP growth rates were relatively stronger between 2000 and 2002 than in 2003 and 2004.

2 Although the Berlin Wall was dismantled in 1989, West and East Germany were not officially reunited until late 1990, so most series show combined German data starting in 1991.

3 The strength of a country's currency can be an important factor in improving or reducing cost competitiveness. For example, if the Canadian dollar appreciates in relation to the currency of other countries, our manufactured exports become more expensive to buy, and companies are often forced to cut the export price in order to remain competitive. However, some hidden advantages of a rising dollar can counter the changing price of exports and improve competitiveness. For example, depending on the industry, many manufactured goods require imported material, which will cost less because of a stronger dollar. Also, Canadian companies with U.S. debt, or those who import machinery or equipment to produce their goods, would also benefit from currency appreciation.

4 In 1998 and 2000, the French government passed legislation that reduced the workweek to a maximum of 35 hours.

5 The changing characteristics of older workers in Canada, as well as structural changes to the labour market are some of the reasons for expecting many current workers to continue working past 65, the traditional age of retirement (Duchesne 2004).

6 Labour is the main ingredient or cost involved in producing goods, and the easiest to measure. However, capital (such as equipment), energy and materials are also factors in production. Multifactor productivity is an output calculation that captures the impact of changes in all the factors.

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# Who gains from computer use?

Cindy Zoghi and Sabrina Wulff Pabilonia

Since the 1980s, wage inequality between highly educated and less educated workers has grown substantially. One hypothesis is that the computerization of work allows workers to shift their focus from routine tasks to problem solving, and that this 'upskilling' increases productivity and wages (Attewell 1987). One study found that workers who used a computer on the job earned 17.6% higher wages than those who did not (Krueger 1993). This paper sparked debate as to whether the return is truly for using a computer or a result of being selected to use one. If workers with high ability or unobserved skills are those given computers on the job, then cross-sectional results could falsely attribute a wage premium to computer use—a conclusion supported by a study finding that workers who used other tools associated with white-collar type work, including a pencil and a hand calculator, received a similar return on these tools (DiNardo and Pischke 1997).

A few researchers have used panel data to control for unobserved individual differences. Most found small or insignificant returns on technology use, suggesting that firms are allocating information technologies to their highest skilled workers, who already earn more.

While proponents of upskilling argue that computerization can lead to productivity and wage increases, critics counter that computerization can be *deskilling*. That is, the increased mechanization reduces workers' control over the production process and simplifies jobs, leading to lower wages. In fact, the introduction of new technology may be upskilling for some workers (because it complements them in production) and deskilling for others (because it substitutes for them in

production), even within a single firm. A case study of the introduction of digital cheque imaging in a bank, found that exceptions processors spent more time on problem solving and less on repetitive tasks while the staff of deposit processors with the same skill requirements was reduced (Autor, Levy, and Murnane 2002). In this case, computers substituted for some routine tasks and complemented problem-solving. These differences may be observable between occupational groups as computers change skill requirements. For example, word-processing programs may be deskilling for clerical workers because documents can be prepared more quickly and with fewer skills, but upskilling for managers because such programs allow them to take on a greater variety of tasks. Another reason for differential returns to technology across workers is that managers and professionals with high cognitive skills are especially important for the implementation of new technologies (Bresnahan, Brynjolfsson and Hitt 2002). They need to be able to transform organizations to take advantage of technology and new information so that they can learn about their customers. Similarly, since highly educated workers have a comparative advantage in adjusting to new technologies, the introduction of new technologies should shift demand away from less educated workers (Bartel and Lichtenberg 1987).

This study uses a panel of workers surveyed in the 1999 and 2000 Workplace and Employee Survey (WES) to re-examine wage premiums for using a computer at work (see *Data source*). It identifies the return to adopting a computer, as distinct from the negative return from ceasing to use a computer, and examines the returns for specific subgroups of workers by education, occupation, and computer application. It also measures the longer-term returns to continued computer use and the effects of previous computer experience and training to determine whether the difference between the small returns for adopters and the much larger returns for continued users can be attributed to learning costs.

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## Wage differential for computer use

A 'naïve' wage equation was estimated by ordinary least squares with various personal characteristics and computer use (yes/no) as the explanatory variable of interest (see *Methodology*). The resulting wage premium for computer use is 16.9%, which does not account for selection effects or differing effects across subgroups of workers (Table 1).

Unobserved worker characteristics, such as ability, may also make computer users different from other workers. If these unobservables are correlated with wages,

**Table 1 The wage effect of using a computer**

	Pooled OLS model (naïve)	Individual fixed-effects model	First- differenced model
Dependent variable	ln(hourly \$)	ln(hourly \$)	Δln(hourly \$)
Computer user	.1565***	.0160**	...
Both years (maintainers)	...	...	.0375***
1999 only (ceasers)	...	...	.0029
2000 only (adopters)	...	...	.0377***
R <sup>2</sup>	0.4285	0.0879	
Adjusted R <sup>2</sup>			0.0243

Source: Workplace and Employee Survey, 1999 and 2000

Statistically significant at \* =  $p < .10$ ; \*\* =  $p < .05$ ; \*\*\* =  $p < .01$ .

Note: The OLS model includes a constant, years of education, potential experience (and its square), parents or grandparents from a non-European country, different language at work than at home, part-time status, marital status, sex, sex interacted with marital status, union coverage, regional indicators, five occupational indicators, tenure with the establishment, a year indicator, the natural log of establishment size, and the percentage of computer users in the establishment. The other models include the same variables except those that are constant over time and recent promotion in 2000.

## Methodology

An economic model of wages that accounts for the production activities of firms, employee education, varying employee productivity, varying job complexity across occupations, declining computer costs and varying computer training costs results in four possible sources of wage dispersion relating to computer use and adoption (Zoghi and Pabilonia 2004).

1. Computer users might be more productive relative to non-users, regardless of computer use.
2. Computer users might be the type of employee firms protect by paying higher-than-market (or efficiency) wages.
3. Higher computing productivity might raise wages for computer users.
4. Lower costs of computerization might increase the computer wage premium.

Only the third source represents the 'true' computer wage premium. The others indicate that computer use probably coincides with other employee characteristics that employers value (selectivity effects). This study uses a number of different approaches to isolate the true computer wage premium from the selectivity effects.

### Cross-sectional ordinary least squares (naïve)

This model estimates the gross wage differential between computer users and non-users that includes all four factors outlined above, controlling for years of education, potential experience, potential experience squared, parents or grandparents from a non-European country, different language spoken at work than at home, part-time status, marital status, sex, sex interacted with marital status, union coverage, regional indicators, five occupational indicators, tenure with the establishment, a year indicator, establishment size, and percentage of computer users in the establishment.

### Controlling for unobserved qualities

If computer users have other unobserved qualities (such as ability or ambition) that are correlated to wages, then cross-sectional estimates of the computer wage premium, as above, are upward biased. However, an algebraic trick can be used with panel data to eliminate this bias. If wage changes are estimated as a function of the change in characteristics over time, then all characteristics that do not change (whether observed or unobserved) 'drop out' of the model. These are termed 'fixed-effects' models. Only those characteristics that can change over time are included: education, potential experience, marital status, work-home language differences, part-time status, union coverage, job promotion, number of employees, and the percentage of computer users within the establishment.

Since the returns to computer use can also vary according to changes in computer use patterns, the four possible computer use transitions a worker can experience over time can be separately identified, and returns to computer use allowed to vary between these groups of individuals and over time. The four transitions are those who never used a computer, those who used a computer in both periods, those who ceased using a computer in 2000, and those who adopted a computer between 1999 and 2000.

An alternative approach is to use past wages to capture the fixed effect. This enables the return to computer use of long-term users to be estimated, as opposed to focusing on changers.

Since the theoretical model also indicated that the computer-use premium could vary by type of worker and application, all the fixed-effects models were estimated separately by occupational groups, educational groups, and application used most frequently. Computer training variables were added to examine the interactions between training and the computer wage premium.



the previously reported wage premium would be incorrectly attributed to computer use. Indeed, many other researchers have found that the wage premium for computer use is greatly diminished or no longer exists when they control for unobserved individual heterogeneity.<sup>1</sup> Many demographic variables are time-invariant and consequently do not appear in the fixed-effects model. However, education did change for quite a few workers, possibly due to measurement error in one or both years. Additionally, marital status, work-home language differences, part-time status, and union coverage can change. For many of the establishments, both the number of employees and the percentage of computer users changed between 1999 and 2000. Also considered was recent promotion, a factor that may be correlated with changes in both computer use and wages.<sup>2</sup>

Confirming previous results, the fixed-effects estimate was only 1.6% (Table 1, column 2).<sup>3</sup> Identification in this specification comes from the 9% of workers who changed computer status—6% adopted and 3% ceased to use a computer in 2000.<sup>4</sup> The model assumes the absolute value of the return to computer use is the same for both adopters and ceasers—which may not be the case. In addition, it does not provide any information about the return to computer use for workers who used a computer in both 1999 and 2000 or even for many years prior to 1999 (Dolton and Makepeace 2004).

Therefore, the four possible computer-use transitions a worker can experience over time were separately identified, and returns to computer use were allowed to vary between these groups of individuals and over time. The four transitions are: those who never used a computer, those who used a computer in both periods, those who ceased using a computer in 2000, and those who adopted a computer between 1999 and 2000.

In a first-differenced model, the effect of computer use on wages for the average worker in the first year of computer adoption is a statistically significant 3.8% (Table 1, column 3). The coefficient on ceasing to use a computer is not statistically significantly different from zero, perhaps due to downward wage rigidity.

The small wage premium found does not necessarily indicate that returns to computer use are this small but merely that returns to the average worker in the first year of computer use are small. Returns might be small in the first year if employers passed along some or all of the costs of computer training to their employees. However, the return to long-run computer experience for continuing computer users may well differ.

### Accounting for worker differences and technology use

So far, the implication has been that the average worker does not earn the high wage premiums initially associated with computers—at least in the short

#### Data source

The **Workplace and Employee Survey** was initially conducted in 1999. Establishments in the survey are followed annually, while employees are followed for only two years and then re-sampled. The analysis used a panel of employees with their matched employer information from 1999 and 2000—the most recent available. The panel aspect allows a control for unobserved individual characteristics that might affect the propensity for computer use as well as wages.

In 1999, more than 23,500 employees in almost 6,000 establishments were interviewed. Establishments were first selected from employers with paid employees in March of the survey year. Employers in the territories and those operating in crop and animal production; fishing, hunting, and trapping; private households; religious organizations; and public administration were excluded. At each establishment, a maximum of 24 employees were randomly sampled. All employees were selected in establishments with fewer than four employees. In 2000, just over 20,000 employees were

re-interviewed. For some of the main econometric analysis, a restricted sample was used—the 19,000 employees who responded in both years, remained with the same employer in both years, and had non-missing observations on the dependent and independent variables. (No significant differences were apparent between the full sample and restricted sample employee characteristics.)

The dependent variable in the analysis is the natural logarithm of the hourly wage. Employee respondents reported wages or salaries before taxes and other deductions in any frequency they preferred (hourly, daily, weekly, annually). They were also asked about additional variable pay from tips, commissions, bonuses, overtime, profit-sharing, productivity bonuses, or piecework. Hourly compensation was derived by dividing total pay by total reported hours. (Managers may be more likely to work unreported hours than other workers. Thus, hourly wages for this occupational group would be overestimated.)

**Table 2 Wage effects of adopting a computer by occupation and education**

<b>Occupation</b>	
Managers	.0704*
Professionals	.0437
Technical/trade	.0389***
Marketing/sales	-.0026
Clerical/administrative	.0118
Production, no trade	.0214
<b>Education</b>	
Advanced degree	.1760**
Bachelor's degree	.1031***
College or vocational training	.0289**
High school graduate	.0310
Less than high school graduate	.0146

Source: Workplace and Employee Survey, 1999 and 2000

Statistically significant at \* =  $p < .10$ ; \*\* =  $p < .05$ ; \*\*\* =  $p < .01$ .

Note: The sample is restricted to employees who responded to the survey in both years and remained with the same employer in the same occupation.

run—although the premium is still positive and economically significant. Nevertheless, certain workers may earn higher than average returns. Evidence for such differential effects was sought by re-estimating the first-differenced model for workers by occupational group, educational group, and type of application used most frequently.

Six broad occupational groups were examined: managers, professionals, technical and skilled production workers, marketing and sales workers, clerical and administrative workers, and unskilled production workers with no trade or certification. Group samples were restricted to those who were in the same occupation in both years (Table 2). Even controlling for individual heterogeneity, managers earned a statistically significant 7.0% higher wages in the first year of computer use, compared with 3.9% for technical/trade workers. The remaining occupational groups, however, earned no statistically significant wage premium for adopting computers, and only the return to professionals using a computer was an economically significant 4.4%. These results coincide with expectations, since white-collar workers are likely to possess more problem-solving skills than other workers. If computers are a complement for high-skilled workers and a substitute for low-skilled workers, it makes sense that the adoption of computers would affect the wages of these groups differently. Estimations of the wage effect for the average worker obscure important differences between types of workers.

A second way to test for differential effects of computerization for particular types of workers is to estimate the models separately by education, dividing the sample into those with less than a high school diploma, only a high school diploma, college or vocational training, a bachelor's degree, or an advanced degree. Wage premiums are quite high for workers with an advanced degree (17.6%) or a bachelor's degree (10.3%), still positive for those with college or vocational training (2.9%), and not statistically different from zero for those with a high school diploma or less.

Another source of heterogeneity that may affect the returns to computer use stems from the different tasks performed. If technology complements a worker doing problem-solving tasks but substitutes for a worker doing repetitive tasks, then it may be important to look at more detailed questions of technology use. To do this, the adoption indicator was disaggregated into the primary software application used by the adopter (14 categories). In addition, two other types of technology—computer-aided tools (for example, industrial robots) and non-computer technologies (for example, cash registers and scanners)—were tested for (Table 3).

**Table 3 The wage effect of adopting a specific application**

	First-differenced model
Computer-aided technologies	-.0072
Other technologies	-.0034
<b>Main application used</b> (conditional on adopting a computer)	
Word processing	.0729***
Spreadsheet	.0189
Database	.0511**
Desktop publishing	.1996*
Management applications	.0246
Communications	.0694**
Programming	.0890
Specialized office	.0343*
Data analysis	.1091
Graphics	-.0152
Computer-assisted design	.0289
Computer-assisted engineering	.0171
Expert systems	.0866
Other	-.0173

Source: Workplace and Employee Survey, 1999 and 2000

Statistically significant at \* =  $p < .10$ ; \*\* =  $p < .05$ ; \*\*\* =  $p < .01$ .

Note: The sample is restricted to employees who responded to the survey in both years and remained with the same employer.



The wage premium is largest for those adopting desktop publishing, data analysis, and programming (20%, 10.9%, and 8.9% respectively) compared with continued non-users. These applications tend to demand critical thinking or problem-solving skills. However, the variance for the coefficients in this model comes from individual workers who adopt a computer and this particular software. The number of workers in each group is quite small, resulting in large standard errors in most instances. Adopters who use word processing, database, communication, and specialized office applications earn significant, but smaller, wage premiums (7.3%, 5.1%, 6.9%, and 3.4% respectively). Thus while some of the estimates in the first-differenced model are quite noisy, some differences in the wage premium do appear to remain depending upon the primary application adopted. It does not seem that workers using technologies other than computers earn a wage premium for that usage. The three different groups of workers—by occupation, education, and type of software application used—seem to largely confirm that technology can affect workers differently.

### Long-term results

One reason the traditional fixed-effects and flexible first-differenced models might yield small estimates of the return to computer use is that they measure the wage change within the first year of adopting or ceasing to use a computer. In order to estimate the return for maintaining computer use, the previous year's wage was used to try to capture the individual fixed effects. The average return to computer use for those who used computers in both periods was 8.3% in 2000 (Table 4). This large and significant return suggests that those with computer skills are earning higher wages than those who are first learning to use their new computers at an establishment. The return to adopting (4.2%) using the lagged wage approach was only slightly higher than that obtained using first-differences (3.8%), suggesting that lagged wages are good proxies for the individual fixed effects—at least for adopters.

Re-estimating the equation for the occupational and educational groups shows that most continued users earned a return to computer use. Even though workers in the marketing/sales and clerical/administrative occupations did not earn a return to adopting, workers in these occupations who continued their computer use earned economically significant returns of 10% and 8% respectively. Among the educational groups, continued users all earned an economically large

**Table 4 The long-run wage effect of using a computer, value-added approach**

	OLS	
	Maintainers	Adopters
<b>All workers</b>	<b>.0796***</b>	<b>.0410***</b>
<b>Occupation</b>		
Managers	.0664***	.0836**
Professionals	.0243	.0523
Technical/trade	.0862***	.0445***
Marketing/sales	.1043***	.0823
Clerical/administrative	.0771***	.0333
Production, no trade	.0563**	.0580*
<b>Education</b>		
Advanced degree	.0601	.1465**
Bachelor's degree	.0829***	.1018***
College or vocational training	.0831***	.0360***
High school graduate	.1008***	.0559***
Less than high school graduate	.0588***	.0175

Source: Workplace and Employee Survey, 1999 and 2000

Statistically significant at \* =  $p < .10$ ; \*\* =  $p < .05$ ; \*\*\* =  $p < .01$ .

Note: The OLS model (using the 2000 sample) includes lagged wage, a constant, years of education, potential experience (and its square), parents or grandparents from a non-European country, different language at work than at home, part-time status, marital status, sex, sex interacted with marital status, union coverage, regional indicators, five occupational indicators, tenure with the establishment, the natural log of establishment size, the percentage of computer users in the establishment, and recent promotion. The other specifications exclude the occupational indicators.

return to computer use. High school graduates, one of the lower educational levels, earned one of the highest returns—10.6%. The coefficient on continued users in the advanced degree group was imprecise. These results suggest that previous fixed-effects models dramatically understate the 'true' returns to computer use, and in fact, only represent the much smaller average returns to adopting or ceasing to use a computer.

Not too surprisingly, the long-term returns are in most cases much larger than the short-term ones, since most workers will not immediately become more productive the instant a computer appears on their desk. Workers must learn to use a computer and incorporate it into their job.<sup>5</sup> In the first year of using a computer on the job, learning costs may be high for workers, especially those with no prior experience. These may be pecuniary costs of courses or on-the-job training, or opportunity costs of lost productivity



while adapting their job to computer use. While some learning costs will be paid by the employer, workers may be expected to implicitly share them, since many of these applications add to their general transferable skills rather than firm-specific ones.

The data provide two ways to assess why returns are lower for adopters than for continued users. One is to compare the returns to adoption for those who received and did not receive computer training. Employees were asked if they participated in any on-the-job or classroom training on computer hardware or software related to their job and paid for by their employers. The 15% of adopters who received (and implicitly required) training would be expected to have lower wages while they paid their share of the training cost, resulting in lower returns in the presence of training. The second way is to compare the returns to adoption for workers with and without prior computer experience. Workers with prior computer experience may be able to reap higher productivity in their first year of computer use than those with no prior computer experience and thus earn a higher return.

Although results are imprecise for the interaction terms because of the small number of adopters with either prior experience or training,<sup>6</sup> the coefficients suggest that learning costs may affect the short-term returns to computer use (Table 5). A computer adopter not receiving training earns a return of around 4%, while one with training earns 3% (Model I). A worker without prior computer experience earns a return to adopting of 2.9%, while a worker with prior experience earns 5% in the year of adoption (Model II).

The theoretical model allows learning costs and the extent to which workers share them to vary across types of workers, showing that these variations can help explain the differential returns to computer adoption. For example, if low-skilled workers require more training than high-skilled workers to master a particular computer application, then it might take longer for any premium to be reflected in their wages. While separate estimations for the different occupational and educational subgroups are quite noisy, as the variance is derived from a one-year wage change, there is nevertheless some evidence that the sharing of these costs is especially high for particular groups of workers, although the pattern is not clearly related to skill level. The one significant result in the training interaction is for the marketing and sales occupations, which is consistent with the fairly large return to continued users for this group (Table 4). Other groups,

such as professionals, clerical and administrative, and the highly educated incur economically large costs of training. While these are not all intuitive, the first-differencing method does not control for unobservable traits that might cause one worker to receive training in the second period and another worker not to receive the training. Thus, although the large negative effect on the interaction term for workers who hold a bachelor's or advanced degree is somewhat surprising (10.2% and 8.0% respectively), it is likely that many of these degree holders do not require formal training and that those who do are different in some important unobservable way. Alternatively, their training programs may be expensive because of the complexity of the applications they must master.

**Table 5 Effects of training and previous computer experience on the computer adoption wage premium**

Adopted in 2000	Model I		Model II	
	Overall	With training*	Overall	Prior experience*
<b>All workers</b>	<b>.0395***</b>	<b>-.0101</b>	<b>.0289**</b>	<b>.0210</b>
<b>Occupation</b>				
Managers	.0630	.0544	.0451	.0590
Professionals	.0626	-.0663	.0189	.0673
Technical/trade	.0340**	.0322	.0379	.0026
Marketing/sales	.0459	-.2908**	-.0205	.0332
Clerical/administrative	.0305	-.0877	.0048	.0149
Production, no trade	.0178	.0541	.0048	.0433
<b>Education</b>				
Advanced degree	.1901***	-.0796	.1274	.1236
Bachelor's degree	.1210***	-.1018	.0834	.0339
College or vocational training	.0314**	-.0136	.0319**	-.0065
High school graduate	.0245	.0329	.0094	.0534
Less than high school graduate	.0129	.0156	.0152	-.0023

Source: Workplace and Employee Survey, 1999 and 2000

Statistically significant at \* =  $p < .10$ ; \*\* =  $p < .05$ ; \*\*\* =  $p < .01$ .

Note: The sample is restricted to employees who responded to the survey in both years and remained with the same employer in the same occupation.

The size of the wage premium for those who do not receive formal training is larger for several of the low-skilled groups (for example, marketing/sales, clerical/administrative) than in the models that do not control for training. If workers were observed a few years after adopting computers, however, their wages might

be higher than those of similar workers who did not adopt a computer between 1999 and 2000. In fact, the effect should be larger than was measured here, since much of the learning costs are not reflected in formal training but in on-the-job experience using a computer.

Most groups also demonstrated a larger return for experienced adopters, shown by the positive return on the interaction, even though the estimates are imprecise. The exceptions are workers with college or vocational training or no high school degree and those in technical and trades occupations, which may indicate that the applications used by these workers tend to be firm-specific and that prior general computer skills are not readily transferable.

## Conclusion

A naïve wage regression indicates that workers who used a computer earned 16.9% more in 2000 than those who did not use a computer. Controlling for unobserved worker heterogeneity using a changing characteristics model, the wage growth for the first year of computer use was a statistically significant 3.8%. This model allows the separate identification of the return to adopting a computer from the wage loss associated with ceasing to use a computer, which is not statistically different from zero.

This panel estimate, however, obscures important differences between types of workers and returns from using different computer applications. While technical workers, professionals and managers earn higher wages in the first year of computer use, other occupational groups, whose skills may be substitutes for computer technologies, earn no statistically significant return. Similarly, workers with a bachelor's or advanced degree earn 10% to 17% more when adopting a computer, while those with college or vocational training earn around 3% and those with a high school diploma or less earn no return. Returns to using different software applications vary markedly, suggesting a return to computerizable tasks that allow creative or cognitive skills to be better utilized. Workers who use other machinery or computer-controlled technology do not earn a return. Computers seem to be a complement to high-skilled workers performing problem-solving tasks and a substitute for low-skilled workers performing repetitive tasks.

Small but significant returns accrue for some workers in the first year of computer use. Using lagged wages as an alternative means of controlling for individual fixed effects, which provides an estimate of returns to computer use for those who used a computer both years, shows that the average worker who used a computer in 1999 and 2000 earned an 8.3% wage premium, more than double the return for the average adopter. In addition, continued users in most skill groups earned more than a 5% return to computer use in 2000.

The result that continued users earn more than adopters may represent greater productivity. The penalty associated with receiving training on a new computer suggests either that workers pay for training in terms of slower wage growth or that workers who receive training differ from those who do not receive training. Controlling for computer training increases wages for many of the low-skilled groups whose premiums were small or zero in previous models. In addition, computer adopters with prior computer experience earned more in the first year than those lacking experience.

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## Perspectives

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### ■ Notes

- 1 See, for example, Bell (1996); Entorf, Gollac and Kramarz (1999); and Entorf and Kramarz (1997).
- 2 The simple correlation between adopting a computer and a recent promotion is 0.0317, while the correlation between ceasing to use a computer and promotion is -0.0054.
- 3 A random-effects specification and an establishment fixed-effects specification were also tried. According to results of the Hausman test, the null hypothesis that the individual effects are uncorrelated with the other regressors in the model could be rejected. The return to computer use controlling for establishment heterogeneity, but not worker heterogeneity, was 7.7%.
- 4 Some may be concerned with the large number of ceasers in the data. Dolton and Makepeace (2004) suggest two possible reasons why workers stop using a computer. One is that they may do so as they move up the promotion ladder. However, in Canada, the simple correlation between ceasing to use a computer and promotion is -0.0054, and this specification and those that follow controlled for promotion. The other reason is that ceasers are not very good at using a computer. A fixed-effects regression using only non-computer users in 1999 found a 3.9% return.



5 Bresnahan (1999) discusses the importance of re-organizing the workplace for effective use of computers.

6 Only 1.2% of the sample both adopted a computer and received some type of training.

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# Job strain and retirement

*Martin Turcotte and Grant Schellenberg*

**T**he decision to retire early may be influenced by many factors, but financial considerations are usually central. Those who have saved enough throughout their working life and who are covered by a pension plan are likely to leave the labour force sooner than others. In contrast, the self-employed and individuals without pension coverage or sufficient savings may have to work until later in life.

An often overlooked factor may also influence the retirement decision: the intrinsic characteristics of one's job. Even after a long career, some individuals may delay retirement for the simple reason that they enjoy their work. On the other hand, many men and women who feel stressed and dissatisfied with their job may feel they can't retire too soon.

This study examines workers whose job may not fit their expectations, focusing on their level of stress. Using the National Population Health Survey (1994 to 2002), the article asks whether older workers (aged 45 to 57) who experience high job strain will be more likely to retire than those who do not feel the same pressure at work (see *Data source and definitions*). In particular, it examines whether individuals in certain occupations or with particular socio-demographic characteristics are likely to retire early because of job strain.

## What is job strain?

Job strain, a concept that was developed more than 20 years ago (Karasek 1979), can be defined as "a measure of the balance between the psychological demands of a job and the amount of control or decision-making power it affords" (Wilkins and Beaudet 1998, 47). Psychological demands include a heavy

workload, time constraints and conflicting demands. Control or decision-making power refers to the freedom to decide how to perform tasks and having a say about what happens in one's job. More broadly, it refers to the possibility of learning new things or performing diversified tasks.

Generally, jobs that are psychologically demanding are associated with high stress. However, the stress can be mitigated if individuals have control or decision-making power. In fact, high demands can even lead to increased well-being if workers have control over their tasks (Sargent and Terry 1998). In these 'active' jobs, demands are viewed as challenges that individuals can meet effectively since they are in a position to take autonomous decisions (Dwyer and Ganster 1991).

In contrast, individuals with high demands but little control—that is, in high-strain jobs—are most at risk for work stress. They are also most at risk of developing work-related health problems. Jobs with moderate demands are generally not very stressful, and even less so if control is high. (However, if demands are too low, negative consequences can result—for example, boredom.) In summary, autonomy level is as crucial as demand level in determining how a job will affect an individual's health or well-being.

The Canadian Centre for Occupational Health and Safety defines workplace stress as harmful physical and emotional responses that can happen when job demands conflict with the amount of control an employee has over meeting these demands. Several studies have documented this negative relationship (Wilkins and Beaudet 1998; Kalimo et al. 2003; Dwyer and Ganster 1991; Karasek et al. 1988).

## Stress and the decision to retire

This article uses longitudinal data over a period of eight years starting in 1994-95 to examine whether retirement behaviours are related to job strain. Among individuals aged 45 to 57 and working full time in 1994-95, 17% had retired by 2002-03 (see retirement

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## Data source and definitions

The **National Population Health Survey (NPHS)** collects health information from private household and institutional residents in the 10 provinces, except on Indian reserves and Armed Forces bases, and in some remote areas.

For each of the first three cycles (1994-95, 1996-97 and 1998-99), two cross-sectional files were produced: general and health. The general file has socio-demographic and some health information for each household member. The health file contains additional, in-depth information about one randomly selected household member. Starting in 2000-01, the NPHS became strictly longitudinal, and the two questionnaires were combined.

In addition to the cross-sectional information, a longitudinal file was produced. In 1994-95, a member from each participating household was randomly selected and the resulting panel of 17,276 was followed over time. Response rates were 92.8% in 1996-97, 88.2% in 1998-99, 84.8% in 2000-01 and 80.6% in 2002-03.

**Analytical techniques and definition of retirement**  
All five cycles of the NPHS were used. For people aged 45 to 57 employed full time in 1994-95 ( $n=1,213$ ), the relationship between job strain and the likelihood of retirement (the event of interest) was examined. Only individuals completing all five cycles and who either stayed in the workforce or retired in subsequent cycles were selected. Those leaving the workforce for other reasons, including health, were excluded (see Allison 1995, 227 for details on this method). The competing risks approach used allows a focus on events of interest only.

The proportional hazards model allows timing of events and their association with various characteristics to be studied. With this method, "each individual's survival history is broken down into a set of discrete time units that are treated as distinct observations. After pooling these observations, the next step is to estimate a binary regression model predicting whether an event did or did not occur in each time unit." (Allison 1995, 211-12).

Time elapsed since the first cycle (in terms of number of cycles) was included as a continuous variable to correct for the greater the likelihood of retirement with passing time. For each person-year, that variable ranged from 1 to 4.

Many but not all factors in the model were allowed to change over the period since it is more realistic, for example, to assume that the risk of retirement in 2002-03 was related to health status or income in 2000-01 rather than 1994-95. Specifically, three broad categories were created: those fixed at their 1994-95 values, those with two values (1994-95 and 2000-01), and those with four. Factors fixed at their 1994-95 values were sex, place of birth, and education. Variables with four values were self-rated health status, presence of children under 13 (yes/no), marital status (married/not married), income adequacy

(see below), class of employment (self-employed/employee), industry, occupation, and province. Job strain was asked only in 1994-95 and 2000-01. In the model including interaction terms, occupation was used for the same periods.

### Construction of the job strain variable

Seven questions measured demand and autonomy levels:

Please tell me if you strongly agree (1), agree (2), neither agree nor disagree (3), disagree (4), or strongly disagree (5).

#### Psychological demands

1. Your job is very hectic (reversed scores).
2. You are free from conflicting demands that others make.

#### Control

3. Your job requires that you learn new things (reversed scores).
4. Your job requires a high level of skill (reversed scores).
5. Your job allows you freedom to decide how you do your job (reversed scores).
6. Your job requires that you do things over and over.
7. You have a lot to say about what happens in your job (reversed scores).

To estimate job strain, the demand items were averaged. The five measuring autonomy and latitude for decision making were also averaged. Average demand was then divided by average autonomy. Individuals whose jobs were not psychologically demanding and who had a high level of autonomy had the lowest scores for job strain (0.2). In contrast, those whose jobs were psychologically very demanding and who had little autonomy or latitude for decision making had the highest scores. In summary, the higher the score, the greater the level of job strain experienced.

The **adequacy of income** variable used in this study classifies the total household income into 3 categories based on total household income and the number of people living in the household.

Lowest and lower-middle income	Less than \$30,000 (1 or 2 persons)
	Less than \$40,000 (3 or 4 persons)
	Less than \$60,000 (5 or more persons)
Upper-middle income	\$30,000 to \$59,999 (1 or 2 persons)
	\$40,000 to \$79,999 (3 or 4 persons)
	\$60,000 to \$79,999 (5 or more persons)
Highest income	\$60,000 or more (1 or 2 persons)
	\$80,000 or more (3 or more persons)

definition in *Data source and definitions*). Not surprisingly, the older people were at the beginning of the period, the greater the likelihood they would have been

retired eight years later. For example, of those aged 55 to 57 in 1994-95, 38% had retired, compared with only 6% of those aged 45 to 47. However, age is only



one determinant of retirement, and multivariate analysis allows an examination of the relative importance of various factors, including job strain.

Overall, individuals who experienced high job strain were not significantly more likely to retire than individuals who experienced low strain (Table, first column). While the propensity to retire for individuals experiencing high levels of job strain appears greater, it failed to be statistically significant ( $p=0.07$ ).

Does this mean that job quality is not related to the decision to retire? Previous research has shown that the relationship between job characteristics (autonomy, use of skills, demands) and health outcomes was not the same for every occupation (Pousette and Johansson Hanse 2002). For example, lack of autonomy may have negative consequences for some types of job but not for others. Accordingly, a supplementary model was run (Table, column 2) and found support for this notion.

Individuals in managerial, professional or technical jobs who expressed high job strain were much more likely to retire than those who expressed low job strain (Chart). For workers in two other occupational groups (sales/services/clerical and blue-collar occupations), job strain was not related to retirement.

Why are managers, professionals and technicians more affected? Perhaps they have different expectations toward their job and their role within the workplace. Many individuals with higher levels of education expect their job to offer a fair amount of latitude and a chance to use their competencies and professional skills. Also, since managers, professionals and technicians generally have higher incomes and are more likely to be covered by a pension plan, those in high-pressure jobs may be less hesitant to retire.

Managers and professionals are also more likely to return to work after retirement (Schellenberg, Turcotte and Ram, forthcoming). With more options for future employment, they may be more willing to leave a job they find unsatisfactory.

In any case, managers, technicians and professionals were much more likely to retire from their job if they felt they had low autonomy, lacked the opportunity for professional development, and were in a hectic job with conflicting demands.

Certain well-known socio-economic variables are related to retirement. For example, the self-employed were about half as likely as employees to retire. The self-employed are not covered by pension plans,

**Table Adjusted risk ratios for transition into retirement**

	Overall	Interaction terms factored in
<b>Sex</b>		
Men	0.58**	0.58**
Women	1.00	1.00
<b>Place of birth</b>		
Outside Canada	0.56*	0.57*
Canada	1.00	1.00
<b>Self-rated health</b>		
Excellent	1.00	1.00
Very good	1.20	1.22
Good	1.31	1.28
Fair/poor	2.04	1.82
<b>Highest level of schooling</b>		
Less than high school	1.05	1.06
High school	1.17	1.19
College, trade/technical diploma	1.97*	2.07*
University degree	1.00	1.00
<b>Presence of children</b>		
At least one	1.28	1.27
None	1.00	1.00
<b>Marital status</b>		
Married	0.91	0.90
Not married	1.00	1.00
<b>Household income adequacy</b>		
Lowest and lower middle	0.63	0.62
Upper middle	0.78	0.79
Highest	1.00	1.00
<b>Employment status</b>		
Self employed	0.49*	0.50*
Employee	1.00	1.00
<b>Industry</b>		
Consumer services	1.23	1.32
Producer services	1.01	1.12
Public sector	1.50	1.44
Goods-producing	1.00	1.00
<b>Province of residence</b>		
Newfoundland and Labrador	2.43**	2.79*
Prince Edward Island	0.85	0.91
Nova Scotia	2.10*	2.23*
New Brunswick	1.49	1.56
Quebec	1.75*	1.97*
Ontario	1.00	1.00
Manitoba	0.96	1.07
Saskatchewan	1.03	0.99
Alberta	1.03	1.03
British Columbia	1.54	1.64
<b>Occupation</b>		
Managerial, professional, technical	0.68	0.11**
Clerical, sales	0.70	0.78
Blue collar	1.00	1.00
<b>Job strain</b>		
All occupations	1.64	1.06
Managerial, professional, technical	-	6.79*
Clerical, sales, blue-collar	-	0.84
<b>Age and control variable for cycle</b>		
Cycle	1.37**	1.39**
Age	1.27**	1.27**

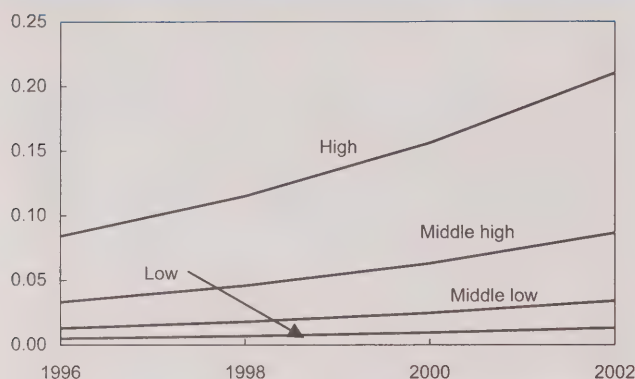
Source: National Population Health Survey, 1994 to 2002

\* Significantly different from the reference group  $p<0.05$ , \*\*  $p<0.01$ .

Reference category



**Chart Predicted probabilities of retirement for managers, professionals and technicians by level of job strain**



A low score for job strain is defined as 0.2, a middle-low score as 0.7, a middle-high score as 1.2, and a high score as 1.7.

making it difficult for them to retire unless they have accumulated considerable savings and wealth (Hayward, Friedman and Chen 1998). In addition, the self-employed generally have more control over their work schedule, allowing them the attractive option of easing into retirement by gradually reducing the number of hours they work. If such an option were offered to employees, many considering retirement might possibly also choose to continue working (Morissette, Schellenberg and Silver 2004).

Consistent with other research on retirement (Schellenberg 2004), immigrants were significantly less likely to retire than the Canadian-born. Among immigrants working full time in 1994-95, 13% had retired by 2002-03, compared with 19% of the Canadian-born. Even when other factors were taken into account, the association between immigration status and the likelihood of retirement remained significant (Table). Immigrants generally arrive in Canada at a later stage in their career, making it more difficult for them to accumulate sufficient years of work to consider early retirement.

Past studies indicate that the relationship between level of education and retirement is ambiguous. While a higher level of education usually favours a better economic outcome and hence the possibility of leaving the labour market earlier, it may also offer more non-economic rewards and opportunity for advancement, encouraging workers to remain in the labour market

longer (Kosloski, Ekerdt and DeViney 2001). Overall, the present results are fairly consistent with previous findings and show that workers who had completed college were more likely to retire than those with a university degree. However, the latter did not differ from those whose highest level of schooling was elementary or high school.

Similar to what previous studies have found (Hayward and Hardy 1985), self-perceived fair or poor health was related to retirement. However, this result just failed to reach statistical significance ( $p = 0.0501$ ). This is partly because those who did not work because of illness or disability, and who are sometimes considered retirees in other studies, were censored in the model (see *Data source and definitions*). A supplementary analysis in which illness/disability was the event of interest (versus staying in the labour market) supported the hypothesis that health is strongly related to leaving the labour market earlier among near-retirees. Those in fair or poor health were 13 times more likely to quit work because of illness or disability than those in excellent health (results not shown).<sup>1</sup>

Men were less likely to retire early than women (15% versus 22%), the association remaining significant when all other factors in the multivariate analysis were taken into account. Some authors have suggested that the effect of job strain on health may be different for men and women (Piltch et al. 1994), but supplementary models showed that the correlation between job strain and the likelihood of retirement is very similar for both sexes (results not shown).

Workers in Quebec, Newfoundland and Labrador, and Nova Scotia were more likely to retire early than those in Ontario. These three provinces had the highest unionization rates in Canada in 2003 (Akyeampong 2004). Being a member of a union, and therefore having pension coverage, significantly increases the possibility of taking early retirement.

## Conclusion

Lack of control combined with too many job demands significantly increases the likelihood of early retirement for individuals in managerial, technical and professional occupations. Previous studies found that expected age of retirement was lower for individuals expressing dissatisfaction with their job (Kim and Hong 2001; Adams 1999). This study confirmed these findings by examining actual retirement behaviours as opposed to expectations.

With the retirement of the baby-boom generation imminent, increasing attention is being paid by employers and policy makers to strategies that could encourage older workers to remain in the workforce. While measures such as increasing salaries or reducing work hours have been proposed, the possibility of greater job autonomy has rarely been considered. Employers might find they could retain some older workers if they offered them more control over their daily tasks. If more autonomy were not possible, fewer demands might also encourage older workers to remain on the job.

### Perspectives

#### Note

1 In the sample aged 45 to 57 and working full time in 1994-95, 7% had left the labour market because of illness or disability by 2002-03. These individuals are sometimes treated as retirees in other studies. In this study, a strict definition of retirement, limited to respondents who said that they were not working because they were retired, was used. A supplementary analysis that combined those who left the labour market for illness or for retirement as the event of interest was conducted. The conclusions about the relationship between job strain and retirement/illness remained the same: For managers, professionals and technicians, the greater the level of job strain, the greater the likelihood of leaving the labour market for retirement or illness/disability. Poor or fair health was also significantly related to leaving the labour market for illness or disability.

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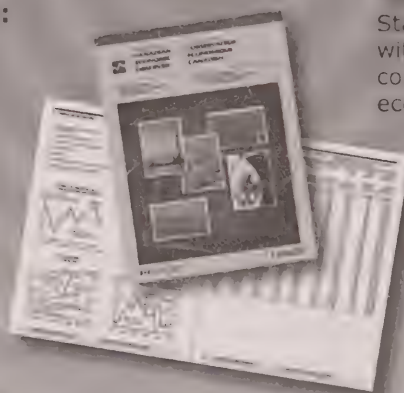
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# Collective bargaining priorities

Ernest B. Akyeampong

**C**ollective agreements are negotiated by unions and employers to establish the terms and conditions of work as well as the rights and obligations of the two parties. The terms of agreement, known as provisions, are the result of the bargaining process, and may be proposed by employers or unions. The final agreement takes into account the prevailing socio-economic climate, and balances employee demands against the employer's ability to satisfy them. Some provisions such as pay, leave, and medical, dental and pension coverage are integral to virtually all collective agreements. These perennial provisions are well-reported and have been extensively analyzed in past studies (Akyeampong 2002, 2003; Marshall 2003).<sup>1</sup>

Other provisions are not as well-known, mainly because their relevance, and hence their inclusion in settlements, reflects socio-economic climate. A good example is the cost-of-living adjustment (COLA) clause. This allows for pay increases at specified intervals during the life of the contract, reflecting changes in the consumer price index. In the early 1980s, when inflation was in the double digits, COLA clauses were a common feature of most collective agreements. In recent years, with annual inflation hovering around 2%, demands for COLA clauses have taken a back seat to more pressing demands.

Using the Workplace and Employee Survey (WES), this article examines some recent popular but perhaps less publicized provisions (see *Data source and definitions* and *Collective bargaining provisions in WES*). Are certain provisions more common in some industries than in others, and if so, why? How many employees are affected by the various provisions? Does the presence of such provisions in a settlement significantly affect labour-management harmony?

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## Data source and definitions

The **Workplace and Employee Survey (WES)** is a joint program of Statistics Canada and Human Resources and Skills Development Canada. The goal of WES is to examine the way employers and their employees respond to the changing competitive and technological environment. Survey results provide insight into the relationship between a firm's employment practices and its performance, as well as in-depth information on the effects of technology, training, and human resources practices. The survey is unique in that employers and employees are linked at the microdata level—employees are selected from the sampled workplaces. Thus, information from both employers and employees is available in a single framework. The longitudinal aspect of WES allows researchers to study both employers and employees over time.

The 1999 sample consisted of 6,300 establishments and 23,500 employees. The 2001 sample consisted of 6,200 establishments and 20,400 employees. Public administration, agriculture, fishing and trapping, and private households are excluded from WES.

**Provision inclusion rate** is the percentage of bargaining settlements containing a given provision. It is the likelihood of a given provision appearing in a bargaining settlement. Thus, if a provision appears in 9 of 10 settlements, the inclusion rate for that provision is 90%. The higher the rate, the more popular or common that provision is deemed to be, and vice versa.

**Settlement provision density** is the proportion of provisions in WES that are included in a bargaining settlement. Thus, if a settlement contained 8 of the 10 provisions, the settlement provision density would be 80%.

## Socio-political and economic context

The priorities of unions and employers and the outcomes of the bargaining process are determined by the socio-political and economic climate of the time as well as evolving business practices. Although this study looks at agreements signed in 1999 and 2001, the settlement provisions reflect events and priorities over a much longer period, both preceding and following the date of signing. And, because collective agreements usually last about three years (HRSDC 2004, 7), the 1999 and 2001 results cover a span of approximately five to six years.

Undoubtedly, the performance of the economy has a major influence on settlements. In this regard, economic indicators at the end of the 1990s and the start of the new century were generally favourable. Canada's GDP experienced sustained annual growth beginning in 1992, only to gather more steam (to over 5%) in both 1999 and 2000, partly because of the Y2K boom (Table 1). A minor bust followed in 2001, mostly as a result of the information technology meltdown. Labour market performance mirrored the GDP, with the unemployment rate recording continuous annual declines starting in 1994 (10.4%), bottoming out (at 6.8%) in 2000, and then climbing (to 7.2%) in 2001. The annual inflation rate as measured by the consumer price index remained under 2% for most of the 1990s, edging up to over 2.5% in 2000 and 2001. These rates pale in comparison with the 10% to 12% experienced in the early 1980s. All in all, the low inflation environment did not prompt demands for COLA clauses, allowing labour and management to pay closer attention to other issues.

**Table 1 Selected economic indicators**

	Gross domestic product	Consumer price index	Base wage rate <sup>1</sup>	Unemployment rate
		% change		%
1980	2.2	10.1	11.1	7.5
1981	3.5	12.4	13.0	7.6
1982	-2.9	10.9	10.2	11.0
1983	2.7	5.8	4.8	12.0
1984	5.8	4.3	3.6	11.3
1985	4.8	4.0	3.7	10.6
1986	2.4	4.1	3.4	9.7
1987	4.3	4.4	4.0	8.8
1988	5.0	4.0	4.4	7.8
1989	2.6	5.0	5.2	7.6
1990	0.2	4.8	5.6	8.2
1991	-2.1	5.6	3.6	10.3
1992	0.9	1.5	2.1	11.2
1993	2.3	1.8	0.7	11.4
1994	4.8	0.2	0.3	10.4
1995	2.8	2.2	0.9	9.6
1996	1.6	1.6	0.9	9.7
1997	4.2	1.6	1.5	9.2
1998	4.1	0.9	1.7	8.4
1999	5.5	1.7	2.2	7.6
2000	5.2	2.7	2.3	6.8
2001	1.8	2.6	3.2	7.2

Sources: Statistics Canada; HRSDC Workplace and Employment Directorate

<sup>1</sup> In collective agreements.

Growing demands for fairness and equity, both in the workplace and elsewhere, have also been a driving factor in collective bargaining. The post World War II era saw a large influx of immigrants, the mass entry of women into the workforce, a rise in feminism, and greater calls for equality and human rights. These trends pushed the federal government to introduce *The Human Rights Act* (1976-77), the *Employment Equity Act* (1985), and *Equal Wages Guidelines* (1986). Over time, the provinces enacted similar laws. Although application of the *Employment Equity Act* may be limited to public and selected private entities, many private businesses adhere to its principles by including appropriate provisions in their collective agreements.

Another social issue driving settlement provisions in recent years has been occupational health and safety. In 1972, Saskatchewan pioneered occupational health and safety legislation in Canada. The Saskatchewan act made health and safety a joint responsibility by requiring worker-management committees to identify and resolve health and safety concerns. It also protected workers' rights to know about hazards in the workplace, to protect themselves against them, and to refuse unusually dangerous work. All jurisdictions have followed Saskatchewan in this regard. In line with technological advances and growing awareness of environmental hazards, concerns about occupational health and safety have grown over the years. The result has been a proliferation of workplace environmental awareness committees involving labour and management, and the entrenchment of health, safety and ergonomic provisions in many settlements.

Other important concerns affecting settlements in recent years can be traced to changes in business practices. Among the most notable are increased adoption of new technology, a rise in corporate mergers and takeovers, growth in contracting out or outsourcing practices, downsizing, restructuring, and ever-increasing demand for a better-educated and more skilled workforce. To cope with these challenges, employers and unions have been forced to devise approaches that are mutually beneficial. Usually, the solutions are spelled out in collective agreements.

### Most common provisions in 2001

Based on the provision inclusion rate (see *Data source and definitions*), the two most likely of the 10 provisions in WES to appear in settlements signed in 2001 related



**Chart A All provision inclusion rates increased between 1999 and 2001.**



Source: Workplace and Employee Survey

to issues of occupational health and safety, and job security. Over 80% of the 72,000 settlements (representing roughly 10% of all workplaces) that year contained provisions addressing these two concerns (Chart A). The high rate for the former is not surprising, given growing public awareness of the need to minimize work-related diseases, injuries, stress and other hazards. The high rate for job security is also understandable, especially in light of the high-tech meltdown immediately following the Y2K boom, and the associated rise in the unemployment rate in 2001.

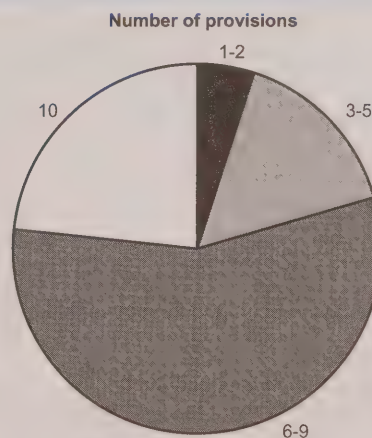
At the other end of the scale, issues dealing with employee participation in decision making, and cost-of-living adjustments had the lowest inclusion rates—less than 50% each. Employee participation in decision making is a relatively recent but growing practice; however, its use is not yet widespread. Inflation has not been an issue over the past decade or so, and COLA clauses not surprisingly ranked last. Inclusion rates for the remaining six provisions ranged from 57% for technological change to 68% for pay equity.

Firm size had no significant effect on any of these results.

The inclusion rate for every provision rose between 1999 and 2001 (Chart A). The biggest increases occurred on issues dealing with technological change (14 percentage points) and workplace reorganization (12 points)—probably reflecting the effects of the period's high-tech boom and bust. The smallest change was the cost-of-living adjustment (up 1 point).

The likelihood of a settlement containing all or most of the WES provisions was very high in 2001, suggesting that most of them commanded the attention of both labour and employers. In 2001, close to one-quarter (23%) of all settlements contained all 10 provisions (Chart B). A little over half (56%) of settlements contained 6 to 9 provisions, and another 15% included 3 to 5. Just 5% of settlements contained clauses dealing with only 1 or 2.

**Chart B Almost 80% of settlements included more than half of the 10 provisions.**



Source: Workplace and Employee Survey, 2001



## Industry differences

For all the major industry groups, the two most common issues were occupational health and safety, and job security (Table 2). COLA clauses featured least often in most industries.

But some notable differences were evident, driven mainly by varying unionization rates. The likelihood of any of the 10 provisions being included in settlements in education and health services, and transportation, communications and utilities—both heavily unionized—was generally much higher. At the other end of the scale, the likelihood was generally lowest in the construction industry.

Employment equity and pay equity provisions were more likely than average to appear in settlements reached in the heavily unionized transportation, communications and utilities industry group, as well as in education and health. Education and training provisions were also very common in education and health settlements, where retraining for new methods and procedures is essential.

As expected, provisions dealing with technological change, workplace re-organization, and contracting out appeared least often in construction industry settlements. The need for such provisions in this rela-

tively labour-intensive industry appeared to be low compared with the capital-intensive transportation, communications and utilities industries.

## Numbers affected by provisions varied

An estimated 11.6 million employees worked for the employers surveyed in WES in 2001. Slightly more than 72,000 (10%) of the employers indicated that the settlement with their largest bargaining unit that year contained at least one of the 10 WES provisions. If it is assumed that agreement provisions eventually trickle down to other workers at the same workplace (unionized or not), then the 72,000 settlements in reality affected, directly or indirectly, most or all of the 4.8 million workers in these workplaces. This amounts to roughly 41% of the employees (Chart C). Using the proportion of total employees affected by the inclusion of a given provision, one can say that job security had the greatest impact, affecting 4.4 million or 38% of all employees. This was closely followed by occupational health and safety, and education and training. At the other end of the scale, provisions dealing with cost of living, employee participation, and employment equity affected the fewest workers—about 20%. The remaining five provisions each affected roughly 30% of workers.

**Table 2 Provision inclusion rates by major industry, 2001**

	All industries	A	B	C	D	E
		%				
Occupational health and safety	83	85	63	93	84	87
Job security/layoffs	82	86	58	96	80	92
Pay equity	68	53	56	66	74	82
Education and training	67	65	53	69	67	83
Employment equity	62	51	51	66	63	78
Contracting out	60	58	43	62	65	64
Workplace reorganization	60	51	30	70	63	79
Technological change	57	54	32	68	62	57
Employee participation	48	41	46	55	39	75
Cost-of-living adjustments (COLA)	43	45	47	50	39	41

Source: Workplace and Employee Survey

A Manufacturing, forestry, mining, oil and gas extraction

B Construction

C Transportation, communications and utilities

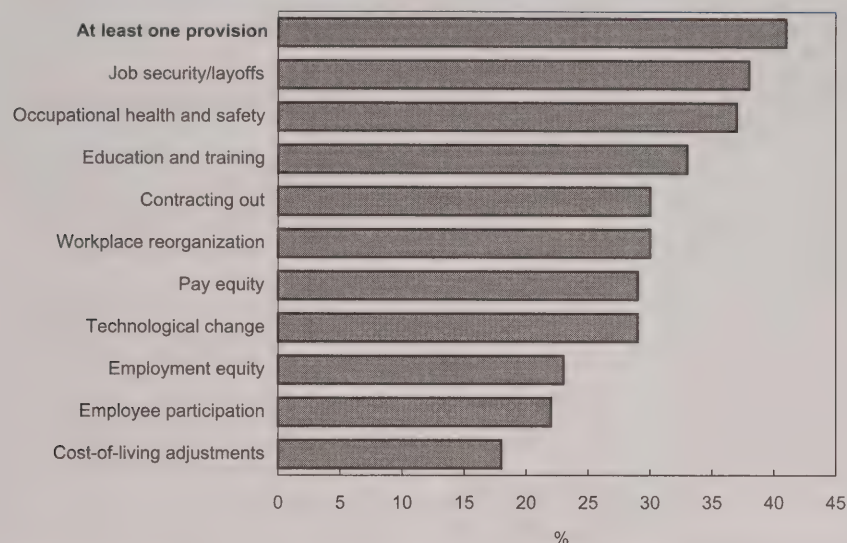
D Other services

E Education and health

## Labour-management relations

WES asked employers to rate how they perceived their labour-management relations—good, fair or poor. This question was asked only of employers with bargaining agents (unions) who also had some grievance or conflict resolution system in place, thus levelling the playing field for the 46,000 respondents.

Irrespective of the number of provisions contained in a settlement, approximately 80% of respondents rated their labour-management relations as good, 20% as fair, and virtually none as poor (Table 3). All things being equal, one would expect the number of provisions contained in a settlement and the

**Chart C Job and personal security provisions affected the most workers.**

Source: Workplace and Employee Survey, 2001

state of labour-management relations to be positively related. In other words, the higher the number of provisions in an agreement, the higher the expectation of harmonious relations, and vice versa. However, the results were inconclusive.

As expected, employers whose settlements contained the least number (1 or 2) of provisions rated their labour-management relations as good less often: 73% compared with the overall 80% average. Thereafter, the results showed no discernable pattern. For example, contrary to expectation, 88% of employers who had only 3 to 5 provisions in their settlements rated labour-management relations as good, a ratio that exceeded even that for those whose settlements contained 6 to 9 provisions (77%) or all 10 provisions (83%). These results suggest that factors other than those listed in WES may be stronger determinants of labour-management harmony, such as supervisor-subordinate relationships or promotion prospects. In addition, it is possible that the more provisions in a bargaining settlement, the greater the strain in maintaining good labour-management relations.

## Conclusion

As socio-economic climate and business practices change, so do the provisions of bargaining settlements. For example, COLA clauses have been much less popular in the low inflation climate of recent years than in the early 1980s when inflation was in the double digits. Similarly, growing demand for healthy, hazard-free workplaces as well as for equity and fairness has raised the profile of provisions dealing with such issues in bargaining settlements.

After consultations with employers, unions and labour-market practitioners, a list of 10 collective bargaining provisions was compiled by WES. The results show that along with job security, the most common provision (appearing in over 80% of settlements) is

**Table 3 Labour-management relations by settlement provision density**

Employer rating	Total	Provisions in settlements			
		1-2	3-5	6-9	10
		%			
Good	80	73	88	77	83
Fair	20	27	11	23	16
Poor	0	0	1	0	0

Source: Workplace and Employee Survey, 2001

occupational health and safety. Other common provisions, appearing in more than 6 in 10 bargaining settlements, centred on pay and employment equity issues as well as education and training—the latter driven by rapidly evolving technology and heightened business competitiveness. In addition, changes in business



## Collective bargaining provisions in WES

In addition to seeking information on well-known or traditional bargaining provisions such as pay, leave entitlements, non-wage benefits (medical, dental and pension coverage), and grievance procedures, WES asked employers if their settlements (numbering over 72,000 in 2001) contained other provisions. A list of 10 was selected following extensive consultation with employers, union leaders, and human resource practitioners in the early 1990s. It is therefore possible that more recent contract provisions may have been missed.

The question read: *Does the agreement with the largest bargaining unit define how to deal with the following provisions?* These were:

### Technological change

Advances in technology and knowledge that increase society's output of goods and services. Technological change may consist of improved products, better manufacturing processes, advances in managerial know-how, new materials, or improved communications and distribution systems. It could result in reallocation of human resources or even layoffs.

### Workplace reorganization

Practices affecting the reorganization of the workplace—for example, an employee suggestion program, flexible job design (job rotation or enrichment), information sharing, problem-solving teams, labour-management committees, and self-directed work groups.

### Employee participation

Refers to employee participation in decision making in the workplace—for example, decisions concerning technological change, organizational change, health and safety, and so forth.

### Occupational health and safety

Policies to reduce risk of accidents, injuries and disease in the workplace. This also includes stress.

### Employment equity

Provisions to ensure that no one is denied employment or promotion for reasons unrelated to their ability (for example, sex, race or disability).

### Pay equity

Policies ensuring that pay is related to the skills required to do the job regardless of who does it, and also that the pay for jobs with similar skills will be the same.

### Job security/layoffs

Various provisions giving workers job protection in the event of automation or new production methods or products.

### Contracting out

The hiring of a person or company from outside the business, under contract, to perform a specific task. Contracting out may affect career advancement and may even result in layoff.

### Education and training

Policies allowing employees to receive education and training to meet the requirements of their position and, in some cases, to advance their career.

### Cost-of-living adjustments

A cost-of-living allowance clause provides pay increases at specified periods during the life of a contract in line with increases in the consumer price index.

practices appear to be increasing the popularity of provisions dealing with contracting out, workplace restructuring, and employee participation in decision making.

## Perspectives

### Note

1 The contents of many settlements are collected and published by the Workplace Directorate Branch of Human Resources and Skills Development Canada. The Workplace and Employee Survey, however, contains the most comprehensive and uniform list of settlement provisions. Several Statistics Canada surveys such as the Survey of Labour and Income Dynamics, and the Labour Force Survey also contain information on several well-known provisions.

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# What's new?

## *Recent reports and studies*

### ■ JUST RELEASED

#### ■ *Urban and provincial income disparities*

In 2001, in all provinces, per capita employment income increased with city size. Per capita incomes were also higher in cities than in rural areas. As a result, provinces with populations relatively concentrated in smaller cities and rural regions, such as the Atlantic provinces and Saskatchewan, tended to have lower per capita employment incomes.

For these provinces, the population distribution across cities and rural regions accounted for at least one-half of income disparities from the national level. For example, earned income per capita in Nova Scotia was \$3,600 below the national level in 2001. Of this disparity, \$2,000 was due to urban-rural composition, and \$1,600 to other factors.

Nationally, almost 80% of Canada's population was concentrated in urban areas. However, over 40% of Saskatchewan and most of the Atlantic provinces were concentrated in rural regions. A significant proportion of their population was also in small cities, where per capita employment income tended to be below the national level.

For more information, see the July 21, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Multifactor productivity*

Growth in multifactor productivity—the increase in output minus the growth of combined inputs (labour and capital)—was 0.5% in 2004, up from 0.1% in 2003. It was the second highest rate since 2000, bettered only by the 2.1% gain in 2002. Since 2000, multifactor productivity has grown annually at twice the pace of the 1990s.

Last year's performance occurred amid rapid growth in business sector output, which accounts for roughly three-quarters of gross domestic product (GDP).

Real GDP in the business sector rose 3.1% last year, nearly twice the 1.6% in 2003. Strong growth in domestic demand and an increase in exports fuelled the growth.

The larger GDP increase in 2004, together with a 2.6% increase in labour and capital inputs, resulted in the 0.5% increase in multifactor productivity.

This was in marked contrast to 2003 when GDP grew a modest 1.6%, only slightly faster than the 1.5% growth of labour and capital—an increase of only 0.1% in multifactor productivity.

For more information, see the July 15, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Does inflation vary with income?*

Inflation varied with income at certain times between 1992 and 2004. The highest and lowest income groups took turns experiencing higher price increases, but at the end of the 12-year period, their total inflation rates were almost equal.

Between January 1992 and February 2004, prices rose 24.7% for the 20% of households with the lowest incomes, an annual average rate of 1.86%; at the same time, they increased 24.4% for the 20% with the highest incomes, 1.83% a year.

Beginning in early 1994, lower-income households experienced two years of relatively lower inflation. Then after January 2001, conditions reversed and the higher-income households saw relatively lower inflation.

Over the 12 years, long-term price trends of a few items actually favoured higher-income households. In large part, this was because of constant lower-than-average price increases for certain items, such as household electronics and computer equipment, which figure more prominently in the expenditure baskets of higher-income households.

However, at the national level, the effect of these long-term price trends was balanced out by the impact of other items such as rent, whose low average increases benefited lower-income households.

The Consumer Price Index (CPI) is widely used to monitor changes in the general level of consumer prices, or in other words, the rate of inflation.

From January 1992 to February 2004, differences in the inflation rates of higher- and lower-income households within provinces were smaller than the differences in inflation between the provinces. This is because price movements of some important items, such as tuition fees, utilities (gas, electricity), mortgage interest payments and car insurance differ significantly from province to province. Some differences were also due to the spending patterns of higher- and lower-income households, which vary by province.

Because of these price factors and spending pattern differences, total inflation rates for households of various income groups differed by province between 1992 and 2004. In British Columbia, Alberta and Saskatchewan, relatively lower-income households experienced higher price increases, while the opposite was true in Ontario and Quebec.

For more information, see the June 17, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Labour Force Survey: Western Canada's off-reserve Aboriginal population*

During the 12 months ending March 2005, unemployment rates for Aboriginal people in the West were 2.5 times higher than for non-Aboriginal people. Additionally, the transition into the labour market was particularly difficult for Aboriginals aged 15 to 24.

On the other hand, a number of positive findings emerged. For example, Métis had relative success in the labour market, with employment rates similar to those of non-Aboriginal people. Moreover, a robust Alberta economy produced strong labour market

outcomes for Aboriginal people. Finally, completion of postsecondary education was particularly important for Aboriginal people since it dramatically increased their chances for employment.

While Aboriginal peoples in Saskatchewan had the most difficulty finding employment, Alberta's economic prosperity benefited the Aboriginal population along with the non-Aboriginal population.

Off-reserve Aboriginals in Alberta had the highest employment rate (62.6%) and the lowest unemployment rate (10.2%) among the western provinces. In fact, their employment rate was similar to the 2005 Canadian average of 62.7%.

In contrast, Aboriginal people in Saskatchewan faced greater hardship in the labour market. Not only was their employment rate the lowest of the western provinces at 50.7%, but their unemployment rate was a very high 16.0%.

For more information, see the June 13, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Impact of foreign ownership on head office employment in manufacturing*

During the 1990s, foreign firms in the manufacturing sector were three times more likely than domestic firms to operate a head office in Canada.

Also, after controlling for characteristics such as size, geographic spread and industrial diversity, foreign firms had about 25% more head office workers than domestic firms. During the 1990s, head office employment in manufacturing averaged 42,000, or about 7.3% of total manufacturing employment.

Foreign ownership can influence head office employment in two ways. First, it may affect the likelihood that a head office is created—one that can be distinguished (functionally or geographically) from its other operations. Second, it may affect the proportion of the work force employed in a head office.

Domestic firms were much less likely to operate a head office than foreign firms. During the 1990s, 5 domestic firms had a head office for every 1,000 without. For foreign-controlled firms, the number was 116.



However, foreign ownership was only one factor among many. The more complex the nature of the firm, the more likely it was to establish a head office. In addition, geography also played a role.

Complexity refers to size, having multiple plants, and industrial diversification. Larger firms, those with multiple plants, and firms that were diversified across industries were more likely to create a head office.

For more information, see the June 8, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Work and commuting in urban centres**

Commuting patterns in Canada's largest urban centres became more complex between 1996 and 2001 as a result of stronger employment growth in the suburbs than in core areas.

Jobs are still strongly concentrated in downtown core areas in most urban centres. However, between 1996 and 2001, the relative economic importance of inner cities declined, as jobs in the suburbs increased at more than four times the pace in the core areas.

Between 1996 and 2001, the number of jobs within 5 km of city centre in census metropolitan areas increased by 156,000, while the number outside 5 km rose by 733,200. As a result, more and more people are commuting cross-town to these suburban areas. And in most instances, cross-town commuters have been driving rather than taking public transit. This tendency to commute by car increased the farther jobs were from the city centre.

Altogether, 58% of commuters drove to work when their job was within 5 km of the city centre. This rose to about 80% when the job was more than 20 km out.

Large urban areas face a challenge in promoting public transit use by workers employed outside the downtown core. When the job was within 5 km of the city centre, 24% of commuters took public transit. However, this quickly fell to 14% when the job was between 5 and 10 km from city centre. Public transit take-up rates were lower still for jobs farther than 10 km from downtown.

Public transit captured larger shares of riders destined for the city core in Toronto and Montréal. However, few commuters took public transit to jobs located more than 20 km from downtown.

Despite the decentralization of jobs and more car traffic to jobs in the suburbs, the proportion of commuters taking public transit remained stable between 1996 and 2001. That is because a larger share of commuters heading for the city centre took public transit.

For more information, see the June 1, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Is inflation higher for seniors?**

Between 1992 and 2004, seniors-only households experienced an average annual rate of inflation of 1.95%. This was only slightly higher than the 1.84% for other households, and the 1.86% overall rate.

Starting in 1998, seniors did begin to encounter slightly greater price increases for certain items. As a result, a small gap did grow between inflation for seniors-only households and other households, which lasted until 2002.

The gap was due to price increases in items such as mortgage rates and some energy products, where trends in prices had changed since 1992. But it was not due to long-term trends in prices for items such as electronics and tuition.

Seniors tend to spend a different proportion of their budget on various items than do other households. However, price gains for many of these items also tend to offset each other. Also, substantial provincial variations exist, ranging from a low of 21.2% for seniors in Quebec to a high of 32.0% in Alberta. The national average was 24.4% during the 12-year period.

For more information, see the May 17, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Family income**

After five consecutive years of strong growth, average after-tax income plateaued for almost every type of family as after-tax family income remained virtually unchanged for the second year in a row in 2003.

The three main determinants of after-tax income (market income, government transfers and personal income taxes) all remained more or less stable.



Average after-tax income for families of two people or more edged down slightly to an estimated \$59,900 from \$60,400 in 2002, after adjusting for inflation. This slight decline is not statistically significant. In contrast, between 1996 and 2001, after-tax income grew an average of 3.2 % annually.

For single-parent families headed by women, average after-tax income held steady at about \$30,000. Between 1996 and 2001, their income gains were among the strongest, primarily because of their rising employment rates.

An estimated 726,000 families (8.4%) lived in low income in 2003. This rate was down slightly from 8.6% in 2002 and well below the peak of 12.1% in 1996.

For more information, see the May 12, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Income of individuals*

In 2003, the median total income of individuals edged down 0.6% from 2002 to \$23,600. Median employment income fell 0.7% to \$24,800.

Taxfilers in the Northwest Territories still had the highest median employment income in 2003 at \$33,500, even though this was down 3.0% from 2002. Those living in Yukon and Ontario shared the second highest median employment income, \$27,400, followed by those in Alberta with \$26,400.

Median employment income fell in 21 of the 27 census metropolitan areas in 2003, with the biggest declines in the three British Columbia centres: Victoria (-3.1%), Vancouver (-2.7%) and Abbotsford (-2.3%).

Employment income represented 75% of the total income, as in 2002. Employment income includes wages and salaries, commissions, training allowances, tips and gratuities, and net self-employment income. Total income includes income from employment, investments, government transfers, private pensions, registered retirement savings plans and other sources.

For more information, see the May 5, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ Studies from other organizations

### ■ *Explaining the deteriorating entry earnings of immigrants*

Using the 1981 to 2001 Canadian Censuses, this study explores causes of the deterioration in entry earnings of successive cohorts of immigrant men and women. Roughly one-third of the deterioration is explained by compositional shifts in language ability and region of birth. The study finds no evidence of a decline in the returns to foreign education for either immigrant men or immigrant women but a definite deterioration in the returns to foreign labour market experience, most strongly among men from non-traditional source countries. About two-thirds of the men's and one-half of the women's deterioration can be explained without reference to entry labour market conditions. When entry conditions are accounted for, the results suggest immigrants of the late 1990s would otherwise have enjoyed entry earnings equal to or higher than their counterparts of the 1960s. See "Explaining the deteriorating entry earnings of Canada's immigrant cohorts, 1966-2000" by Abdurrahman Aydemir and Mikal Skuterud, *Canadian Journal of Economics* 38, no. 2 (May 2005): 641-672.

### ■ *The effects of computerization on Canadian workers*

Many occupations have become increasingly associated with computers, and these jobs require highly skilled workers. Using a production function framework, this paper found that computerization is not labour-saving but rather labour-using. Despite this general trend, important industry differences prevail in the association of skills patterns with the computer. By transforming job structures, the computer has changed skills requirements: knowledge, management and data workers are closely associated with the use of computers while for production workers, the relationship is a substitutive one due to expert systems software. The computer does not affect service workers because of their highly personal tasks. Though their effects should not be exaggerated, computers have certainly acted as a catalyst given their pervasiveness and capacity to integrate with other

technologies. See "Different strokes for different folks: Examining the effects of computerization on Canadian workers" by Marie Lavoie and Pierre Thenien, *Technovation* 25, no. 8 (August 2005): 883-894.

### ■ *Getting the measure of it*

In 2003, 1.5 million service jobs were outsourced abroad from developed countries. By 2008, that number will have risen to 4.1 million. Although India is undoubtedly the biggest recipient, developed countries too rank high on the lists. Among the ten fastest-growing over the period were Estonia, Ireland and Sweden, all now members of the EU. European firms, according to the OECD, tend to outsource within Europe. Limits to the growth of outsourcing are already appearing. Technology, which made it possible to shift work abroad in the first place, is now helping to bring it back. Banks are starting to use automated call centres. According to the McKinsey Global Institute, if current demand continues, the supply of suitable labour in the popular cities of Prague and Hyderabad will run short by 2006 and 2008 respectively. The demand for engineers by Britain and the U.S. alone will use up the suitable supply from all of China, India and the Philippines by 2011. According to the OECD, close to 20% of total employment in the 15 pre-expansion EU countries, America, Canada and Australia could "potentially be affected" by the international sourcing of services. See "Getting the measure of it," *The Economist*, (July 2, 2005): 59-60.

### ■ *Credit cards versus home equity lines of credit*

This study models the choice between credit cards and home equity lines of credit (HELOCs) within a framework where consumers hold lines of credit as instruments of consumption smoothing across state and time. Flexible repayment schemes for lines of credit with sufficiently high discount rates induce risk-averse consumers to underinsure and hold lines of credit instead as a buffer, even when they have access to full and fair insurance markets. Weighing the fixed upfront fees and higher default costs of HELOCs

against the advantages of low and income-tax-deductible interest payments, the study finds a threshold level of potential borrowing below which consumers prefer to use credit cards exclusively. Above that threshold, consumers decide to use HELOCs and consolidate all outstanding credit card debt into them. However, a rising probability of default and the resulting loss of equity in the home will put an upper bound on the potential HELOC borrowing that will prevent full debt consolidation. See "Lines of credit and consumption smoothing: The choice between credit cards and home equity lines of credit" by Shubhasis Dey, working paper 2005-18, Bank of Canada ([www.bankofcanada.ca](http://www.bankofcanada.ca)), June 2005.

### ■ *Labour market adjustments to exchange rate fluctuations*

This paper provides some empirical evidence of significant labour market adjustments to exchange rate movements in Canadian manufacturing industries. During the 1981-97 period, the cumulative effect of 10% depreciation of the Canadian dollar was a 10 to 12.5% increase in labour input. Conversely, a 10% appreciation of the dollar led to a similar decline in labour input. The majority of the effect was due to the change in the demand for domestically produced goods both at home and abroad when the exchange rate moved. The responsiveness of labour input to exchange rate movements was greater in the 1990s than in the 1980s. Also, industries with high and medium net trade exposures adjusted their labour inputs more than industries with low trade exposures. The exchange rate effect on real wages was estimated to be virtually zero for all manufacturing industries. See "Labour market adjustments to exchange rate fluctuations: Evidence from Canadian manufacturing industries" by Danny Leung and Terence Yuen, working paper 2005-14, Bank of Canada ([www.bankofcanada.ca](http://www.bankofcanada.ca)), May 2005.

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#### Perspectives

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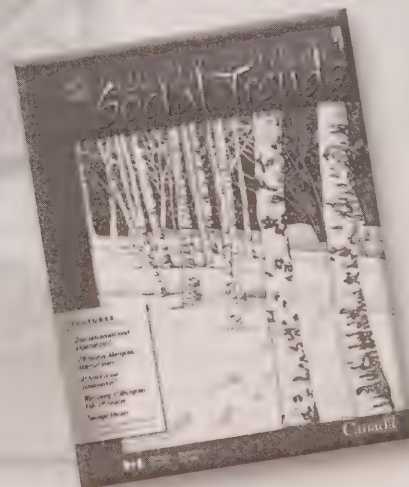
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# Key labour and income facts

## *Selected charts and analysis*

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; [bourjoa@statcan.ca](mailto:bourjoa@statcan.ca).

### **Administrative data**

#### *Small area and administrative data*

Frequency: Annual

Contact: Customer Services  
(613) 951-9720

### **Business surveys**

#### *Annual Survey of Manufactures*

Frequency: Annual

Contact: Dissemination agent  
(613) 951-9497

#### *Annual Surveys—Service Industries*

Frequency: Annual

Contact: Lucie Lussier  
(613) 951-0410

#### *Business Conditions Survey of Manufacturing Industries*

Frequency: Quarterly

Contact: Claude Robillard  
(613) 951-3507

### **Census**

#### *Census labour force characteristics*

Frequency: Quinquennial

Contact: Danielle Zietsma  
(613) 951-4243

#### *Census income statistics*

Frequency: Quinquennial

Contact: John Gartley  
(613) 951-6906

### **Employment and income surveys**

#### *Labour Force Survey*

Frequency: Monthly

Contact: Marc Lévesque  
(613) 951-4090

#### *Survey of Employment, Payrolls and Hours*

Frequency: Monthly

Contact: Sylvie Picard  
(613) 951-4090

#### *Employment Insurance Statistics Program*

Frequency: Monthly

Contact: Sylvie Picard  
(613) 951-4090

#### *Major wage settlements*

Workplace Information Directorate  
(Human Resources and Skills  
Development Canada)

Frequency: Quarterly  
Contact: (819) 997-3117  
1 800 567-6866

#### *Labour income*

Frequency: Quarterly

Contact: Anna MacDonald  
(613) 951-3784

#### *Survey of Labour and Income Dynamics*

Frequency: Annual

Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Financial Security*

Frequency: Occasional

Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Household Spending*

Frequency: Annual

Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

### **General social survey**

#### *Education, work and retirement*

Frequency: Occasional

Contact: Client Services  
(613) 951-5979

#### *Social and community support*

Frequency: Occasional

Contact: Client Services  
(613) 951-5979

#### *Time use*

Frequency: Occasional

Contact: Client Services  
(613) 951-5979

### **Pension surveys**

#### *Pension Plans in Canada Survey*

Frequency: Annual

Contact: Patricia Schembari  
(613) 951-9502

#### *Quarterly Survey of Trusteed Pension Funds*

Frequency: Quarterly

Contact: Bob Anderson  
(613) 951-4034

### **Special surveys**

#### *Survey of Work Arrangements*

Frequency: Occasional

Contact: Ernest B. Akyeampong  
(613) 951-4624

#### *Adult Education and Training Survey*

Frequency: Occasional

Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Graduate Surveys*

(Postsecondary)

Frequency: Occasional  
Contact: Client Services  
(613) 951-7608

# The residential construction industry

Construction has three broad components: residential; non-residential; and engineering, repair and other activities. Residential consists of buildings intended for private occupancy: detached; semi-detached, duplex or row houses; apartments; cottages; and mobile homes. The focus here is mainly on residential construction over the 1980 to 2004 period.

Developments in the construction industry determine the diversity of the Canadian household stock. Not only does a dwelling provide shelter, but for owners it also becomes a major asset. In acquiring this asset, a household pays the builder's profit, interest on any mortgage, and property taxes. At the same time, homes normally appreciate in value. Homeowners can then borrow against their equity to meet unexpected expenses, diversify into other investments, or generate income during retirement. They can also transfer the dwelling as an asset to their heirs.

In addition, residential construction contributes to the overall economy, both directly and indirectly. It generates employment and demand in financial and other services, other goods-producing industries and utilities.

## Definitions

**Residential structures** are single-family homes (completely detached on all sides); semi-detached, duplex, or row housing; apartments; cottages; and mobile homes.

**Residential construction investment** can be divided into new housing, alterations and improvements to existing dwellings, and transfer costs (the value of services relating to the sale of dwellings—largely real estate commissions).

The **value of a building permit** covers materials, labour, profit and overhead. Land is not included. Legal fees, surveying fees and accrued interest may sometimes be included. Repairs requiring no permit are excluded.

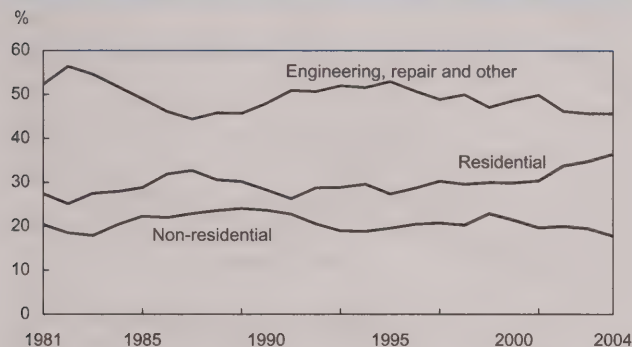
**Family income** consists of income received during a calendar year by all family members aged 16 or over. It includes wages and salaries, net income from self-employment, investments, government transfers, pensions, alimony, and scholarship. Income in kind is excluded.

A **mortgage** is any debt that uses the home as collateral.

**Disposable income** is personal income less income tax and deductions for C/QPP and EI.

*For further information, contact Raj K. Chawla, Labour and Household Surveys Analysis Division, at (613) 951-6901 or [raj.chawla@statcan.ca](mailto:raj.chawla@statcan.ca).*

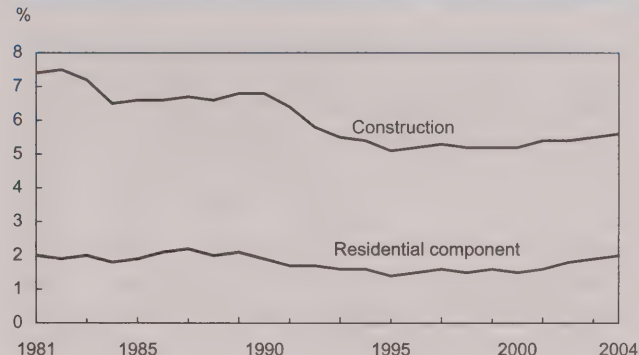
### Construction industry components



The residential share of the construction industry grew from 27.4% to 36.5% between 1981 and 2004. These gains were at the expense of non-residential construction as well as engineering, repair and other construction activities. The latter category accounted for nearly half of the total industry.

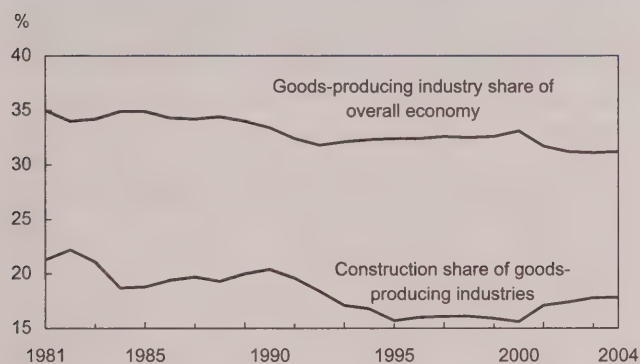
Residential construction contracted following the recessions of 1980-81 and 1990-91. Since 2000, its share of the industry has inched steadily upwards in line with falling bank rates and relatively stable inflation and unemployment.

### Shares of GDP



Even though the construction industry grew, its relative share of GDP fell from 7.4% in 1981 to 5.6% in 2004. While GDP rose 88% over this period, the construction industry increased only 41% (1997 dollars). However, the residential component performed better than the overall industry, its share of GDP remaining close to 2% throughout the period. Output in residential construction increased by 87%, from \$11.4 billion to \$21.3 billion, fuelled by greater housing demand, new technology, and rising real estate prices.

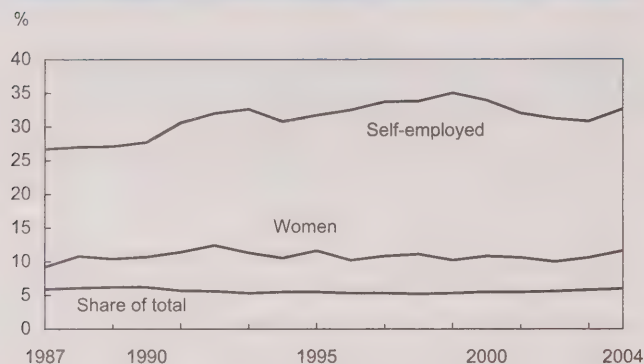
### Share of construction in goods-producing industries



Construction is a goods-producing industry, along with agriculture, forestry, fishing, mining, oil, gas, utilities, and manufacturing. Overall, these industries accounted for 31.2% of the economy in 2004, compared with 35.0% in 1981. Construction's share among goods-producing industries fell from 21.3% in 1981 to 15.6% in 2000, but climbed to 17.8% by 2004, largely because of gains in the residential component.



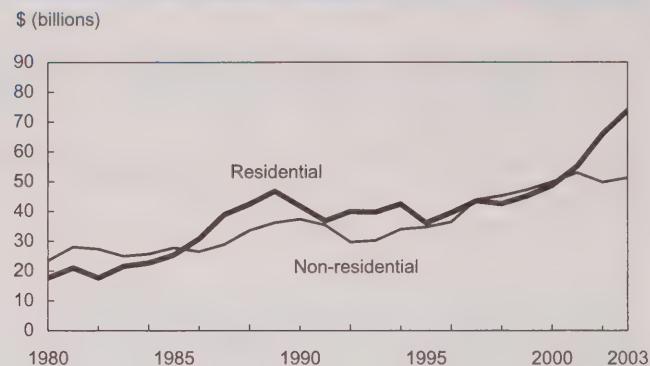
### Construction employment



The construction industry employed 953,000 persons in 2004 compared with 729,000 in 1987, representing 6.0% and 5.9% of total employment in each respective year. Men dominated the industry, but women made some gains as their representation inched up from 9.2% in 1987 to 11.6% in 2004. Women's share of total employment rose from 43.0% in 1987 to 46.8% in 2004.

The self-employed represented 32.6% of the construction industry in 2004, compared with 26.7% in 1987. Construction probably offers better opportunities for self-employment than most industries and is comparable to business, building and other support services.

### Capital expenditure in construction

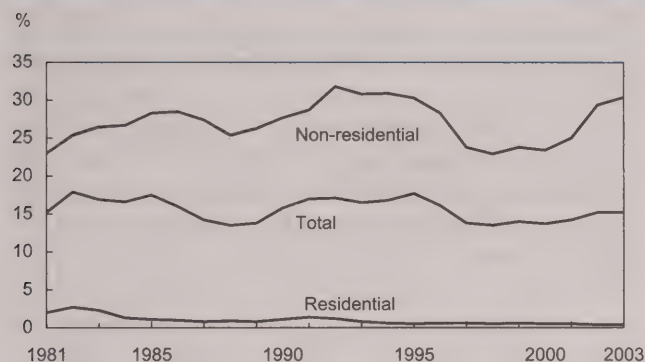


Between 1980 and 2004, capital expenditure in residential and non-residential construction (excluding machinery and equipment) rose from \$41.1 billion to \$138.7 billion. However, the relative proportions changed quite dramatically, residential accounting for 43.1% of total capital in 1980 compared with 60.9% in 2004.

Not surprisingly, capital expenditure in construction drops during recessionary periods as investors become concerned that a slump in the housing market will not provide the desired return on investment. Expenditure fell by \$4.0 billion in 1982-83 and \$9.6 billion in 1990-92. On the other hand, when the economy is performing well, housing demand may accelerate, spurring an injection of capital. After 1998, expenditure in residential construction rose steadily, reaching \$42.0 billion in 2004.

Some of the growth in capital expenditure may be attributed to the rising demand for housing resulting from an increase in the number of households over time (from 8.8 million in 1980 to 13.2 million in 2004). Residential capital expenditure (in current dollars) per household rose from \$2,000 in 1980 to \$6,400 in 2004. Corresponding values for the non-residential sector were \$2,700 and \$4,100.

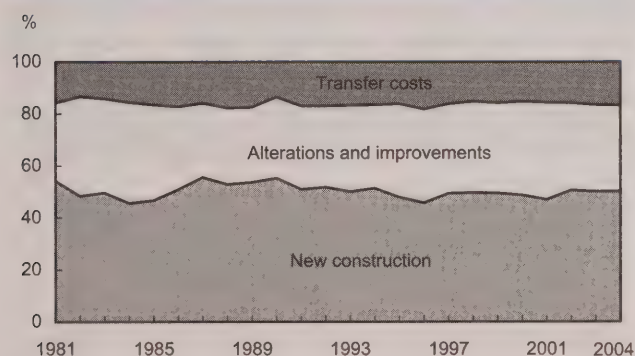
## Public expenditure in construction



Almost all capital expenditure in residential construction is financed by the private sector, the public sector contributing just 2.0% in 1980 and 0.4% in 2003. The residential market is controlled by market forces, which determine house prices, builder profit margins, quantity and location.

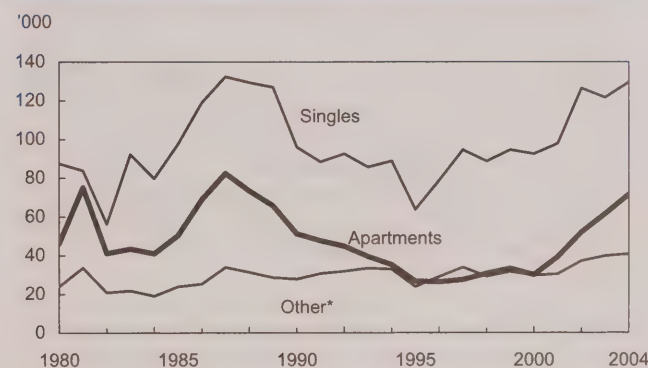
On the other hand, governments provide much of the capital for non-residential construction, which includes schools, hospitals and nursing homes. The public sector was responsible for 30.4% of capital expenditure in this area in 2003 compared with 23.0% in 1980. Public-sector investment in non-residential construction played an important role during the recessionary periods of the early 1980s and the 1990s, when its share of capital expenditure rose.

## Capital expenditure in residential construction



New dwellings, alterations and improvements to existing dwellings, as well as transfer costs make up capital expenditure in residential construction. Between 1981 and 2004, new dwellings alone accounted for 46% to 56% of expenditure. Alterations and improvements accounted for 28% to 39%, and transfer costs the rest. In other words, most capital expenditure went to new housing.

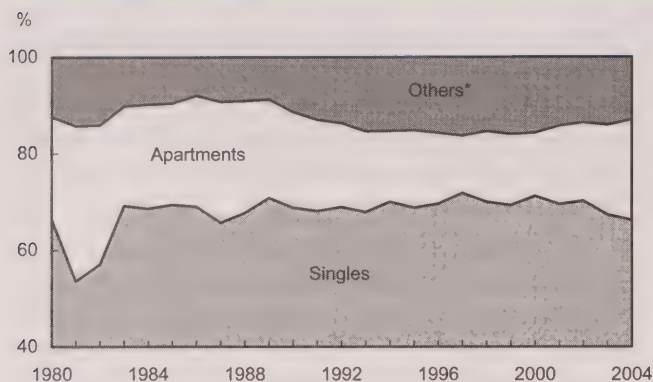
## Residential building permits



\* Includes doubles, rows, terraces, cottages and conversions.

The number of building permits issued rose from 157,800 in 1980 to 241,500 in 2004, equivalent to one permit per 56 households in 1980 and one per 55 households in 2004. Building activity has therefore kept pace with the increased number of households. A little over half of permits issued during these years were for single-family dwellings.

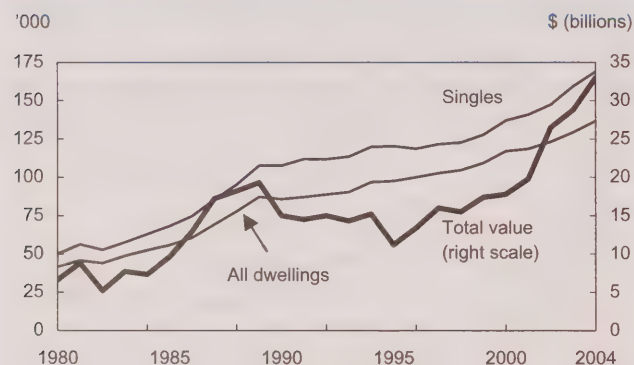
## Residential building permits by type of dwelling



\* Includes doubles, rows, cottages and conversions.

Except in 1981 and 1982, single-family dwellings accounted for 66% to 72% of the value of yearly building permits. Apartment units, on the other hand, showed considerable variability; their highest share was 32.1% in 1981 and lowest 11.9% in 1997. Since 2000 apartment construction has rebounded; the number of permits as well as its share of total permit value has been climbing.

## Average value of residential building permits

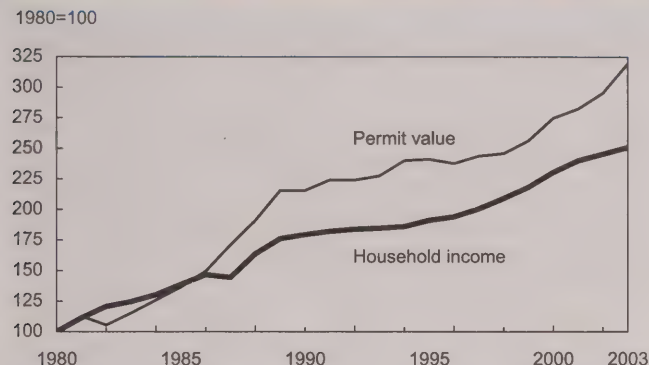


With a few exceptions, new home values have risen yearly. The average value of a permit issued for a detached dwelling more than tripled between 1980 and 2004, from \$49,900 to \$168,900. The average value of all permits increased from \$41,700 to \$136,800.

In current dollars, total permits grew from \$6.6 billion in 1980 to \$33.0 billion in 2004 (from \$15.7 billion to \$33.0 billion in constant dollars). Permit values may be affected by factors other than inflation, such as housing demand and supply, location, labour, builder profit margins, and issues peculiar to the local market. Inflation had a great impact on building permits between 1980 and 1994, but much less thereafter.



## Average permit value for a single-family dwelling and household income

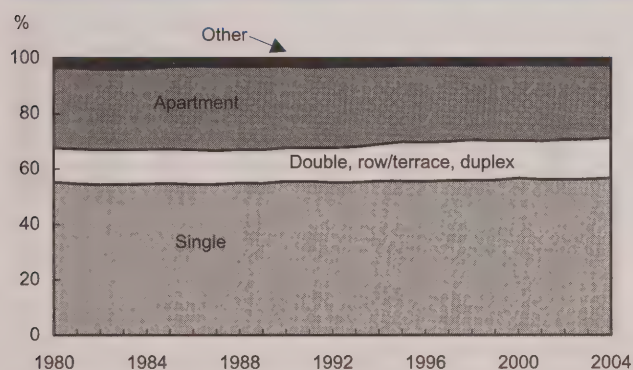


Note: Households include families and unattached individuals.

Household income did not keep pace with the rise in home values. The mean value of a permit for a single-family dwelling rose from \$49,900 in 1980 to \$159,400 in 2003 (a 3.2-fold increase), while mean family income rose from \$23,400 to \$58,700 (2.5 times). The mean value of a single family dwelling rose from 2.1 times the annual income of a household in 1980 to 2.7 times in 2003.

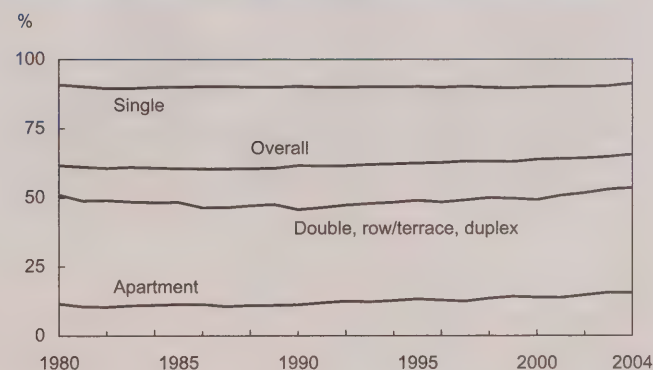
The gap in rates of increase between single-family home values and household income has widened since 1985. In the early 1980s, incomes rose faster than house values, mostly because of higher inflation. When price rises outpace growth in income, affordability becomes an issue, not only with respect to paying the mortgage, but also maintaining the home. Nevertheless, from 1980 to 2004, the overall rate of homeownership rose steadily, from 61.6% to 65.6%.

## Distribution of households by dwelling type



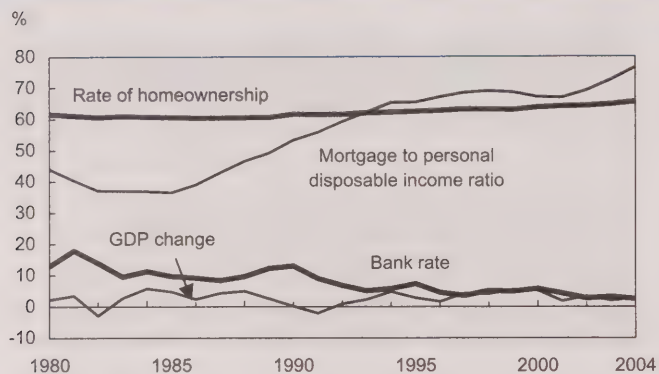
The distribution of households by type of dwelling changed little over the last 25 years. Just over half of households (55% to 57%) lived in single detached dwellings, 26% to 30% in apartment units, and the remainder in doubles, duplexes, row or terrace houses, or others such as mobile homes.

## Rates of ownership by type of home



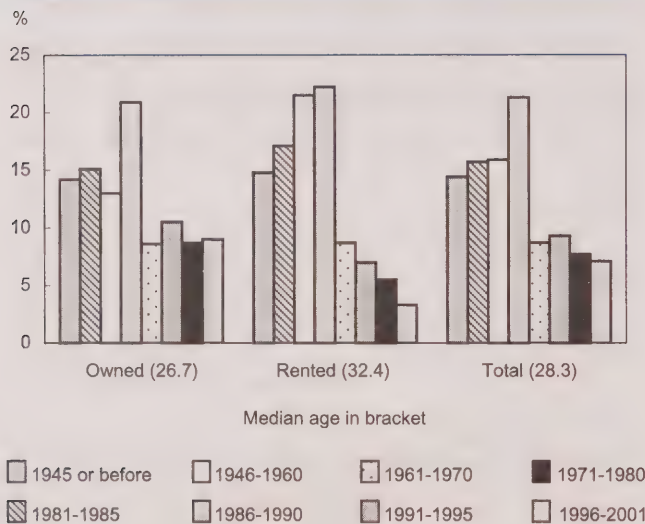
Of households in single detached dwellings, 90% were owners. This rate remained steady between 1980 and 2004. However, among those occupying apartment units, the ownership rate rose from 11.6% to 15.5%, representing an increase in condominium units. The rate for those owning semi-detached, duplex or row houses rose from 51.0% to 53.5%.

## Homeownership and major economic indicators

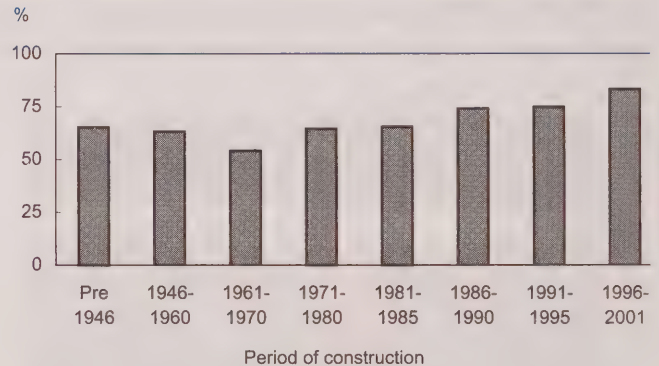


Most of the increase in homeownership rates has occurred in the last five years—up 2.5 percentage points compared with 1.4 points between 1980 and 1999. Contributing factors include consistent economic growth, the ability to buy a house with little or no down payment, a declining bank rate with correspondingly low mortgage rates, initiation of the Home Buyer's Plan allowing first-time owners to borrow from RRSPs for a down payment, and the overall easy access to mortgage credit. As a result, the ratio of mortgage debt to disposable income for households has jumped nearly 10 percentage points in the last four years compared with a 23 percentage-point increase between 1980 and 2001.

## Age of housing stock, 2001



## Rate of ownership by age of dwelling, 2001



In the 2001 Census, the median age of dwellings occupied by homeowners was 26.7 years. Nearly 10% of these owners had bought their houses in 1996 or after. On the other hand, the median age of dwellings lived in by renters was 32.4 years. A plurality (a little over one-fifth) of owners as well as renters were living in 21 to 30 year-old structures. Of all households, both owning and renting, 14.4% lived in dwellings built in 1945 or before, and just 7.1% in ones built in 1996 or later. The median age of all occupied dwellings was 28.3 years.

Dwellings built more recently are much more likely to be owned than rented. Of those built from 1996 to 2001, 83.1% were owned, compared with 74.7% from 1991 to 1995. Nearly half of dwellings built in the 1960s were owned.

# Unionization

At 13.5 million, average paid employment (employees) during the first half of 2005 was 173,000 higher than during the same period a year earlier. On the other hand, union membership hardly changed, rising only 8,000 to 4.1 million. As a result, the unionization rate (density) fell from 30.3% to 30.0%.

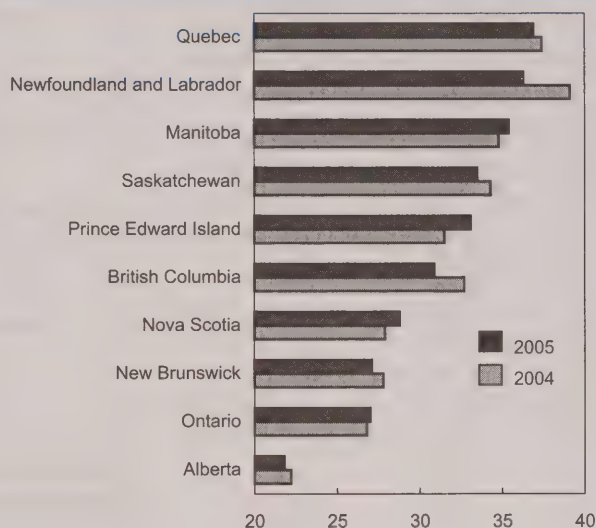
Both men and women registered decreases in unionization rates, with the decline for men being larger. At 30.2%, the women's rate in 2005 continued to exceed the rate for men (29.7%).

Unionization fell in both the public sector (to 71.3%) and the private sector (to 17.5%).

Prince Edward Island, Nova Scotia, Ontario and Manitoba recorded rate increases, with the other six provinces showing declines.

The rate fell from 31.9% to 31.5% for full-time workers and remained virtually unchanged for part-time workers (23.3%).

**Quebec and Newfoundland and Labrador remain the most unionized provinces; Alberta, the least.**



Source: Labour Force Survey, January-to-June averages

## Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the Labour Force Survey. Further details can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at (613) 951-4090.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources and Skills Development Canada (HRSDC). Further information on these statistics may be obtained from Angèle Charbonneau, Workplace Information Directorate, HRSDC at 1 800 567-6866.



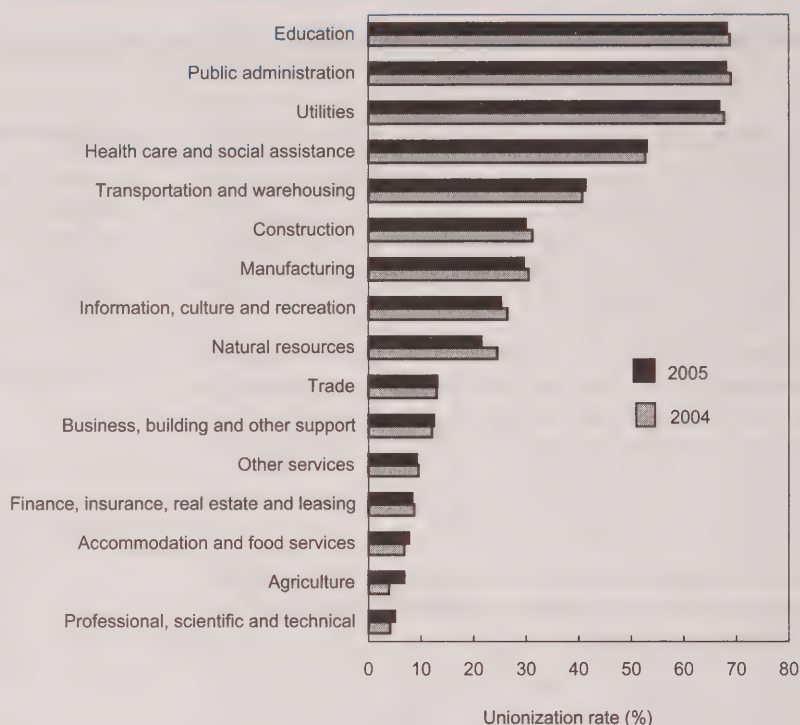
The unionization rate for permanent employees fell to 30.6%, but remained unchanged at 25.4% for those in non-permanent jobs. The rate fell in workplaces with 20 or more employees and rose in those with less than 20 employees.

Unionization rose in 7 of the 16 major industry groups: agriculture; trade; transportation and warehousing; professional, scientific and technical; business, building and other support; health care and social assistance; and accommodation and food. All other industry groups registered declines.

Among the 10 major occupational groups, unionization rose in only 2: sales and service, and occupations unique to primary industry. The rest showed declines.

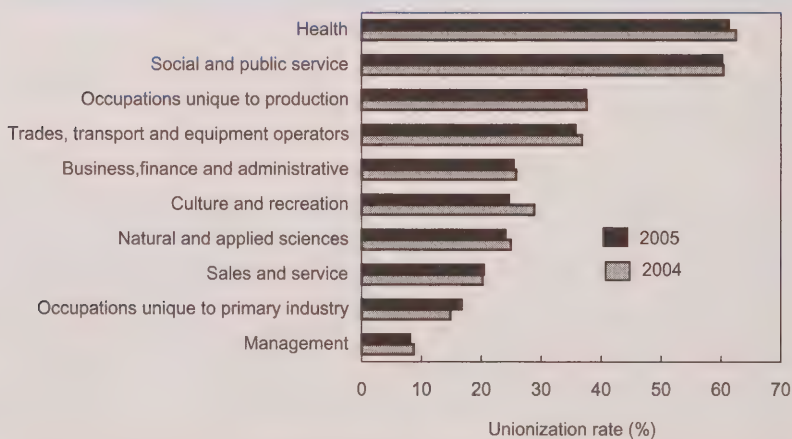
The number of employees who were not union members but covered by a collective agreement averaged 305,000, up from 258,000 a year earlier (see Akyeampong 2000 for a description of this group).

### The highest unionization rates were in public-sector industries.



Source: Labour Force Survey, January-to-June averages

### Unionization in community service occupations far outpaced that in others.



Source: Labour Force Survey, January-to-June averages

## Union membership and coverage by selected characteristics

	2004			2005		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
	'000	%	%	'000	%	%
<b>Both sexes</b>	<b>13,336</b>	<b>30.3</b>	<b>32.2</b>	<b>13,509</b>	<b>30.0</b>	<b>32.2</b>
Men	6,742	30.2	32.3	6,841	29.7	32.1
Women	6,594	30.4	32.2	6,669	30.2	32.3
<b>Sector<sup>2</sup></b>						
Public	3,055	72.1	75.8	3,128	71.3	75.2
Private	10,282	17.9	19.3	10,381	17.5	19.3
<b>Age</b>						
15 to 24	2,272	13.5	15.0	2,291	14.1	15.8
25 to 54	9,631	33.5	35.5	9,664	32.9	35.3
25 to 44	6,554	29.8	31.8	6,535	29.7	31.9
45 to 54	3,077	41.2	43.4	3,129	39.7	42.3
55 and over	1,434	35.6	37.4	1,555	35.1	37.5
<b>Education</b>						
Less than Grade 9	378	28.7	29.7	345	26.4	28.1
Some high school	1,481	22.5	23.7	1,444	22.5	23.9
High school graduation	2,726	27.8	29.3	2,838	26.9	28.7
Some postsecondary	1,423	23.1	24.7	1,257	22.3	24.1
Postsecondary certificate or diploma	4,560	34.3	36.3	4,720	33.7	36.1
University degree	2,768	34.3	37.1	2,904	34.4	37.5
<b>Province</b>						
Atlantic	911	30.3	31.6	916	30.0	31.5
Newfoundland and Labrador	182	39.1	40.3	181	36.3	38.0
Prince Edward Island	54	31.5	33.4	56	33.1	34.8
Nova Scotia	377	27.9	29.0	377	28.8	30.4
New Brunswick	298	27.8	29.2	302	27.1	28.4
Quebec	3,166	37.4	40.5	3,167	36.9	40.4
Ontario	5,327	26.8	28.2	5,428	27.0	29.0
Prairies	2,283	26.9	29.0	2,306	26.6	28.5
Manitoba	485	34.8	37.8	488	35.4	37.6
Saskatchewan	378	34.3	35.7	386	33.5	35.1
Alberta	1,421	22.2	24.2	1,431	21.8	23.7
British Columbia	1,649	32.7	34.1	1,693	30.9	32.6
<b>Work status</b>						
Full-time	10,852	31.9	33.9	11,017	31.5	33.8
Part-time	2,484	23.4	24.9	2,493	23.3	25.1
<b>Industry</b>						
Goods-producing	3,243	30.8	32.8	3,263	29.6	32.0
Agriculture	113	3.9	4.9	120	6.8	7.5
Natural resources	223	24.5	26.5	248	21.5	23.2
Utilities	134	67.7	70.8	124	66.8	69.1
Construction	591	31.2	33.5	645	29.9	31.9
Manufacturing	2,182	30.5	32.3	2,126	29.6	32.2
Service-producing	10,093	30.1	32.0	10,246	30.1	32.3
Trade	2,175	13.0	14.2	2,227	13.1	14.2
Transportation and warehousing	670	40.7	42.3	655	41.3	42.8
Finance, insurance, real estate and leasing	785	8.7	10.2	831	8.3	9.6
Professional, scientific and technical	648	4.1	5.3	678	5.0	6.8
Business, building and other support	476	12.1	13.5	481	12.5	14.4
Education	1,031	68.8	72.3	1,069	68.2	72.6
Health care and social assistance	1,509	52.7	54.6	1,504	53.0	55.5
Information, culture and recreation	592	26.4	28.1	597	25.2	27.6
Accommodation and food	917	6.8	7.4	894	7.7	8.4
Other	471	9.5	10.8	475	9.2	11.3
Public administration	819	69.0	74.3	833	68.1	73.6

## Union membership and coverage by selected characteristics (concluded)

	2004			2005		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
	'000	%	%	'000	%	%
<b>Occupation</b>						
Management	949	8.7	11.6	914	8.1	11.2
Business, finance and administrative	2,656	25.8	27.8	2,647	25.4	27.5
Professional	331	16.7	19.7	337	18.2	21.6
Financial and administrative	698	24.2	26.4	731	22.9	25.0
Clerical	1,627	28.3	30.1	1,579	28.0	30.0
Natural and applied sciences	884	24.9	27.1	954	24.0	26.2
Health	802	62.5	64.3	822	61.3	63.7
Professional	95	41.0	46.3	87	40.4	47.4
Nursing	255	79.7	81.0	264	77.9	80.2
Technical	177	58.7	60.0	199	59.0	61.1
Support staff	274	56.3	57.7	272	53.6	54.9
Social and public service	1,017	60.4	63.3	1,075	60.2	64.3
Legal, social and religious workers	406	38.8	41.0	432	37.3	41.3
Teachers and professors	612	74.7	78.1	644	75.5	79.8
Secondary and elementary	418	87.3	89.3	442	85.9	88.8
Other	193	47.4	53.9	202	52.9	59.9
Culture and recreation	275	28.8	30.4	316	24.6	27.3
Sales and service	3,421	20.2	21.5	3,451	20.4	21.9
Wholesale	321	5.1	6.2	353	7.2	7.9
Retail	1,008	11.8	12.7	1,033	12.8	13.9
Food and beverage	532	10.0	10.3	485	10.6	11.7
Protective services	220	56.1	61.0	218	56.3	62.6
Child care and home support	268	37.1	38.4	257	37.0	39.1
Travel and accommodation	1,167	25.6	27.1	1,205	24.5	26.2
Trades, transport and equipment operators	1,898	36.8	38.9	1,925	35.7	37.9
Contractors and supervisors	109	27.9	31.5	117	28.3	31.1
Construction trades	212	37.9	39.6	233	37.3	40.0
Other trades	781	39.2	41.6	791	37.6	40.0
Transportation equipment operators	491	36.7	38.4	473	35.1	36.7
Helpers and labourers	306	33.0	35.0	310	33.2	35.2
Unique to primary industry	243	14.8	15.9	263	16.7	17.7
Unique to production	1,096	37.6	39.5	1,040	37.5	39.7
Machine operators and assemblers	905	38.1	40.0	836	37.3	39.5
Labourers	191	34.9	37.3	205	38.3	40.6
<b>Workplace size</b>						
Under 20 employees	4,375	12.6	13.9	4,401	12.9	14.5
20 to 99 employees	4,431	31.1	33.1	4,438	30.2	32.6
100 to 500 employees	2,842	42.3	44.7	2,878	41.4	44.0
Over 500 employees	1,687	53.7	56.4	1,792	53.1	56.0
<b>Job tenure</b>						
1 to 12 months	2,957	14.8	16.7	3,039	14.8	17.1
Over 1 year to 5 years	4,420	23.3	25.1	4,354	23.3	25.5
Over 5 years to 9 years	1,849	30.2	31.9	2,005	30.8	32.9
Over 9 years to 14 years	1,320	39.6	41.6	1,246	36.5	38.3
Over 14 years	2,791	53.4	55.8	2,865	52.7	55.3
<b>Job status</b>						
Permanent	11,727	31.0	32.8	11,808	30.6	32.8
Non-permanent	1,610	25.4	28.0	1,702	25.4	28.2

Source: Labour Force Survey, January-to-June averages

<sup>1</sup> Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).<sup>2</sup> Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.



Approximately 4.0 million (29.8%) employees belonged to a union in 2004. An additional 268,000 (2.0%) were covered by a collective agreement.

Those in the public sector—government, Crown corporations, and publicly funded schools or hospitals—were four times as likely as their private-sector counterparts to belong to a union (72.0% versus 17.4%).

Almost 1 in 3 full-time employees belonged to a union, compared with about 1 in 4 part-time. Also, almost 1 in 3 permanent employees was a union member, compared with 1 in 4 non-permanent.

High unionization rates were found among employees aged 45 to 54 (40.1%); among those with a postsecondary certificate or diploma or a university degree (33.9%); in Newfoundland and Labrador (37.6%) and Quebec (36.8%); in educational services (68.9%), public administration (68.5%), and utilities (68.0%); and in health care occupations (52.9%).

Low unionization rates were recorded among 15 to 24 year-olds (13.3%); in Alberta (21.8%); in agriculture (3.5%); in professional, scientific and technical services (4.6%); and in management occupations (8.5%).

## Union membership, 2004

	Total employees	Union member	
		Total	Density
	'000	'000	%
<b>Both sexes</b>	<b>13,498</b>	<b>4,019</b>	<b>29.8</b>
Men	6,867	2,036	29.7
Women	6,631	1,983	29.9
<b>Sector*</b>			
Public	3,053	2,198	72.0
Private	10,444	1,821	17.4
<b>Age</b>			
15 to 24	2,359	314	13.3
25 to 54	9,666	3,184	32.9
25 to 44	5,666	1,942	29.6
45 to 54	3,100	1,242	40.1
55 and over	1,473	521	35.4
<b>Education</b>			
Less than Grade 9	380	103	27.2
Some high school	1,518	337	22.2
High school graduation	2,783	747	26.8
Some postsecondary	1,404	318	22.6
Postsecondary certificate or diploma	4,623	1,569	33.9
University degree	2,790	945	33.9
<b>Province</b>			
Atlantic	937	277	29.6
Newfoundland and Labrador	188	71	37.6
Prince Edward Island	57	17	30.7
Nova Scotia	383	106	27.6
New Brunswick	309	83	27.1
Quebec	3,202	1,179	36.8
Ontario	5,382	1,414	26.3
Prairies	2,306	312	26.6
Manitoba	490	171	34.9
Saskatchewan	383	129	33.8
Alberta	1,433	312	21.8
British Columbia	1,672	536	32.1
<b>Work status</b>			
Full-time	11,053	3,454	31.2
Part-time	2,444	566	23.1
<b>Industry</b>			
Goods-producing	3,331	992	29.8
Agriculture	117	5	4.6
Natural resources	237	55	23.4
Utilities	133	90	68.0
Construction	642	194	30.2
Manufacturing	2,203	647	29.4
Service-producing	10,166	3,028	29.8
Trade	2,201	283	12.9
Transportation and warehousing	668	274	41.1
Finance, insurance, real estate and leasing	808	68	8.4
Professional, scientific and technical	651	28	4.3
Business, building and other support	484	58	11.9
Education	991	683	68.9
Health care and social assistance	1,521	804	52.9
Information, culture and recreation	614	156	25.5
Accommodation and food	921	62	6.7
Other	477	43	9.0
Public administration	829	568	68.5

In 2004, the unionization rate for women surpassed that of men for the first time (29.9% versus 29.7%).

Among men, part-time employees had a much lower rate than full-time (17.8% versus 31.0%). Among women the gap was narrower (25.4% versus 31.5%).

The unionization rate of women in the public sector (73.9%) exceeded that of men (69.0%), reflecting women's presence in public administration, and in teaching and health positions. However, in the private sector, only 12.7% were unionized, compared with 21.4% of men. The lower rate among women reflected their predominance in sales and several service occupations.

A higher-than-average rate was recorded among men with a postsecondary certificate or diploma (34.1%), as well as among those with less than grade 8 education (30.1%). For women, the highest rate was among those with a university degree (40.0%), reflecting unionization in occupations such as health care and teaching.

Among those in permanent positions, the rate for men was almost identical to that for women (30.6% versus 30.5%). Among those in non-permanent positions, women were more unionized than men (26.4% versus 22.5%).

### Union membership, 2004 (concluded)

	Total employees	Union member	
		Total	Density
	'000	'000	%
<b>Occupation</b>			
Management	943	80	8.5
Business, finance and administrative	2,655	665	25.0
Professional	342	58	17.0
Financial and administrative	707	168	23.8
Clerical	1,607	439	27.3
Natural and applied sciences	908	221	24.3
Health	808	504	62.4
Professional	94	39	41.7
Nursing	255	205	80.1
Technical	181	105	57.9
Support staff	278	156	56.1
Social and public service	999	604	60.5
Legal, social and religious workers	409	160	39.0
Teachers and professors	590	445	75.4
Secondary and elementary	397	347	87.5
Other	194	98	50.5
Culture and recreation	290	81	27.9
Sales and service	3,471	696	20.1
Wholesale	341	18	5.3
Retail	1,017	123	12.1
Food and beverage	530	49	9.3
Protective services	232	132	56.7
Child care and home support	260	97	37.1
Travel and accommodation	1,190	299	25.2
Trades, transport and equipment operators	1,949	702	36.0
Contractors and supervisors	110	31	28.2
Construction trades	230	87	37.7
Other trades	784	303	38.6
Transportation equipment operators	498	182	36.6
Helpers and labourers	327	100	30.4
Unique to primary industries	272	40	14.8
Unique to production	1,104	403	36.5
Machine operators and assemblers	901	333	37.0
Labourers	203	70	34.6
<b>Workplace size</b>			
Under 20 employees	4,469	561	12.6
20 to 99 employees	4,443	1,346	30.3
100 to 500 employees	2,881	1,208	41.9
Over 500 employees	1,705	905	53.1
<b>Job tenure</b>			
1 to 12 months	3,046	443	14.5
Over 1 year to 5 years	4,438	1,020	23.0
Over 5 years to 9 years	1,896	565	29.8
Over 9 years to 14 years	1,293	496	38.3
Over 14 years	2,825	1,496	53.0
<b>Job status</b>			
Permanent	11,775	3,597	30.5
Non-permanent	1,723	423	24.5

Source: Labour Force Survey

\* Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other

Unionized jobs generally provide higher earnings than non-unionized ones. However, factors other than collective bargaining provisions play a role as well. These include varying distributions of unionized employees by age, sex, job tenure, industry, occupation, firm size, and geographical location.

Although these factors have not been examined, it is clear that unionized workers and jobs tend to have certain characteristics that are associated with higher earnings. For example, union density is higher among men, older workers, those with higher education, those with long tenure, and those in larger workplaces. Although differences in earnings and non-wage benefits cannot be attributed solely to union status (Akyeampong 2002), the union wage premium (after adjusting for employee and workplace characteristics) has been estimated at 7.7% (Fang and Verma 2002).

In 2004, the average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true for those working both full time (\$22.05 versus \$18.50) and part time (\$18.51 versus \$11.33).

In addition to having higher hourly earnings, unionized part-time employees generally worked more hours per week than their non-unionized counterparts (19.3 hours versus 16.9). As a result, their average weekly earnings were nearly double (\$364.32 versus \$196.23).

### Average earnings and usual hours by union and job status, 2004

	Hourly earnings			Usual weekly hours, main job		
	All employees	Full-time	Part-time	All employees	Full-time	Part-time
<b>Both sexes</b>	<b>18.50</b>	<b>19.70</b>	<b>13.07</b>	<b>35.5</b>	<b>39.5</b>	<b>17.5</b>
Union member	21.55	22.05	18.51	35.9	38.7	19.3
Union coverage*	21.57	22.09	18.40	36.0	38.7	19.1
Not a union member**	17.07	18.50	11.33	35.2	39.9	16.9
<b>Men</b>	<b>20.15</b>	<b>21.10</b>	<b>12.10</b>	<b>38.2</b>	<b>40.7</b>	<b>16.5</b>
Union member	22.41	22.82	16.31	38.4	39.8	18.2
Union coverage*	22.44	22.86	16.38	38.4	39.8	18.1
Not a union member**	19.08	20.23	11.07	38.1	41.2	16.1
<b>Women</b>	<b>16.79</b>	<b>17.94</b>	<b>13.49</b>	<b>32.7</b>	<b>37.9</b>	<b>17.9</b>
Union member	20.67	21.10	19.16	33.4	37.3	19.6
Union coverage*	20.66	21.13	19.02	33.4	37.3	19.5
Not a union member**	14.98	16.34	11.45	32.4	38.2	17.3
<b>Atlantic</b>	<b>15.49</b>	<b>16.36</b>	<b>11.01</b>	<b>36.6</b>	<b>40.3</b>	<b>17.6</b>
Union member	19.95	20.16	18.10	37.4	39.4	20.1
Union coverage*	19.88	20.11	17.91	37.4	39.4	20.0
Not a union member**	13.53	14.51	9.34	36.3	40.8	17.0
<b>Quebec</b>	<b>18.00</b>	<b>19.03</b>	<b>13.41</b>	<b>34.6</b>	<b>38.3</b>	<b>18.2</b>
Union member	20.38	20.66	18.70	35.3	37.7	20.2
Union coverage*	20.37	20.68	18.48	35.3	37.8	20.0
Not a union member**	16.42	17.82	11.18	34.2	38.7	17.4
<b>Ontario</b>	<b>19.42</b>	<b>20.82</b>	<b>12.91</b>	<b>35.7</b>	<b>39.7</b>	<b>17.1</b>
Union member	22.67	23.37	17.93	36.4	39.0	18.6
Union coverage*	22.73	23.44	17.92	36.4	39.1	18.5
Not a union member**	18.15	19.73	11.62	35.4	40.0	16.7
<b>Prairies</b>	<b>17.90</b>	<b>19.04</b>	<b>12.70</b>	<b>36.2</b>	<b>40.3</b>	<b>17.3</b>
Union member	20.98	21.52	18.07	36.0	39.1	19.2
Union coverage*	21.01	21.56	18.04	36.1	39.2	19.2
Not a union member**	16.65	17.99	10.95	36.2	40.8	16.7
<b>British Columbia</b>	<b>18.99</b>	<b>20.17</b>	<b>14.34</b>	<b>34.9</b>	<b>39.4</b>	<b>17.2</b>
Union member	22.68	23.26	19.89	35.3	38.7	18.7
Union coverage*	22.74	23.35	19.77	35.3	38.8	18.5
Not a union member**	17.09	18.46	12.18	34.7	39.8	16.7

Source: Labour Force Survey

\* Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).

\*\* Workers who are neither union members nor covered by collective agreements.

On average, unionized women working full time received 92% as much in hourly earnings as their male counterparts. In contrast, women working part time earned 17% more.



Wage gains in 2004 (1.7%) exceeded the rate of inflation (1.3%), reversing the picture of the previous year. During the first five months of 2005, wage gains averaged 2.5%, also slightly higher than the rate of inflation (2.1%).

Wage gains in the public sector in 2004 (1.3%) fell short of those in the private sector (2.2%). However, in the first five months of 2005, the gains in both sectors were almost identical, around 2.5%.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective bargaining timetables, size of the unions involved, strike

duration, and state of the economy. The number of collective agreements up for renewal in a year determines the potential for industrial disputes. Union size and strike duration determine the number of person-days lost. The state of the economy influences the likelihood of an industrial dispute, given that one is legally possible.

The estimated number of person-days lost through strikes and lockouts almost doubled from 1.7 million in 2003 to roughly 3.3 million in 2004.

### Major wage settlements, inflation and labour disputes

Year	Average annual increase in base wage rates <sup>1</sup>			Annual change in consumer price index <sup>1</sup>	Labour disputes and time lost			
	Public sector employees <sup>2</sup>	Private sector employees <sup>2</sup>	Total employees		Strikes & lockouts	Workers involved	Person-days not worked	Proportion of estimated working time
			%			'000	'000	%
1980	10.9	11.7	11.1	10.1	1,028	453	9,130	0.37
1981	13.1	12.6	13.0	12.4	1,049	342	8,850	0.35
1982	10.4	9.5	10.2	10.9	679	464	5,702	0.23
1983	4.6	5.5	4.8	5.8	645	330	4,441	0.18
1984	3.9	3.2	3.6	4.3	716	187	3,883	0.15
1985	3.8	3.3	3.7	4.0	829	164	3,126	0.12
1986	3.6	3.0	3.4	4.1	748	486	7,151	0.27
1987	4.1	3.8	4.0	4.4	668	582	3,810	0.14
1988	4.0	5.0	4.4	4.0	548	207	4,901	0.17
1989	5.2	5.2	5.2	5.0	627	445	3,701	0.13
1990	5.6	5.7	5.6	4.8	579	271	5,079	0.17
1991	3.4	4.4	3.6	5.6	463	254	2,516	0.09
1992	2.0	2.6	2.1	1.5	404	152	2,110	0.08
1993	0.6	0.8	0.7	1.8	381	102	1,517	0.05
1994	...	1.2	0.3	0.2	374	81	1,607	0.06
1995	0.6	1.4	0.9	2.2	328	149	1,583	0.05
1996	0.5	1.7	0.9	1.6	330	276	3,269	0.11
1997	1.1	1.8	1.5	1.6	284	258	3,608	0.12
1998	1.6	1.8	1.7	0.9	381	244	2,444	0.08
1999	2.0	2.7	2.2	1.7	413	160	2,443	0.08
2000	2.5	2.4	2.5	2.7	379	144	1,657	0.05
2001	3.4	3.0	3.3	2.6	381	221	2,199	0.07
2002	2.9	2.6	2.8	2.2	294	168	3,033	0.09
2003	2.9	1.2	2.5	2.8	266	80	1,736	0.05
2004	1.3	2.2	1.7	1.3	300	259	3,256	0.09
2005	2.5	2.4	2.5	2.1				

Sources: Prices Division; Human Resources and Skills Development Canada, Workplace Information Directorate

Note: Major wage settlements refer to agreements involving 500 or more employees.

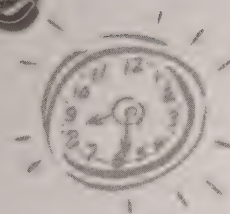
1 2005 data refer to January to May only.

2 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

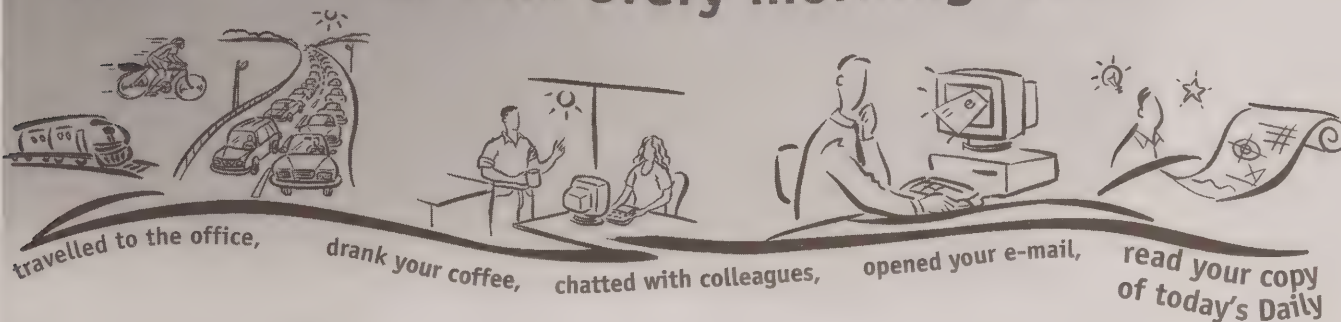
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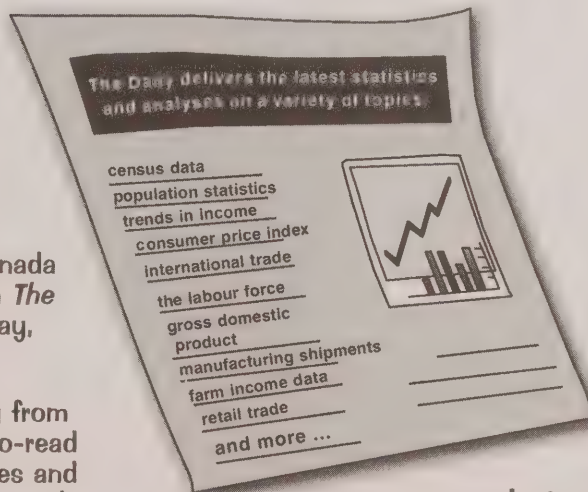


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## ■ Articles

### 5 Out-of-pocket spending on prescription drugs

*Jacqueline Luffman*

While spending on prescription drugs still constitutes less than 1% of the overall household budget, the average expenditure rose 71% between 1992 and 2002. Lack of universal coverage for prescription drugs could adversely affect seniors on fixed incomes and people with specific medical conditions. Spending is most affected by province of residence.

### 14 Post-retirement employment

*Grant Schellenberg, Martin Turcotte and Bali Ram*

The likelihood of returning to paid employment after retirement is influenced by various factors. Although most retirees rejoin the workforce for financial reasons, non-financial considerations are also important. Many in the study who worked full time prior to retirement chose to return on a part-time basis—over one-third of the men and more than half of the women.

### 18 Who's missing out on the GIS?

*Preston Poon*

The Guaranteed Income Supplement is one of the pillars of Canada's safety net for seniors. Available to those with little or no income other than Old Age Security, it plays an integral part in reducing low income among those 65 and over. However, a misunderstanding of the rules and requirements has meant that some eligible seniors are missing out.



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## 28 Youth and the labour market

*Jeannine Usalcas*

After a period of decline from the late 1980s to mid-1990s, the youth employment rate (aged 15 to 24) rebounded between 1997 and 2004. Most of the jobs were in industries that traditionally hire large numbers of young people, including food services. The article documents the growth in youth employment by age, sex, industry and province.

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### Perspectives on Labour and Income

*The quarterly for labour market and income information*

# Highlights

## *In this issue*

### ■ **Out-of-pocket spending on prescription drugs** ... p. 5

- Over 300 million prescriptions are filled in Canada each year—about 10 for each man, woman and child. In 2002, over 6 in 10 households reported out-of-pocket spending on prescription drugs totalling \$3 billion.
- While out-of-pocket prescription drug spending remains a small percentage of the overall household budget (less than 1%), average expenditures rose 71% (in 2002 dollars) between 1992 and 2002, from \$127 to \$218.
- Prescription drugs make up the largest portion of out-of-pocket health care spending for senior households—27.3% of their health care budget in 2002 compared with 17.7% for non-senior households.
- Province of residence is the major factor affecting out-of-pocket prescription drug expenditures, even after taking into account income levels and other household characteristics. As a result, households with similar incomes spend different amounts depending on where they live.

### ■ **Post-retirement employment** ... p. 14

- Just over one-fifth of retirees (22%) returned to paid employment after their initial retirement.
- Post-retirement employment was most prevalent among individuals who initially left the labour force before age 60, had previously worked in a professional occupation, and were in good health.

- While financial considerations were cited most frequently as the reason for returning to paid employment, non-financial reasons were often mentioned as well.

- Almost half (45%) of retirees who returned to paid employment did so on a part-time basis.

### ■ **Who's missing out on the GIS?** ... p. 18

- According to the 1999 Survey of Financial Security, 1.1 million families had at least one member receiving the Guaranteed Income Supplement (GIS), the largest group being seniors living alone (45%) followed by senior couples (24%).
- Senior-headed families receiving the GIS (unattached, senior couples, and other senior-headed) had significantly lower median incomes than their senior-headed, non-recipient counterparts. Virtually all of the GIS families were found in the bottom two-thirds of the after-tax income distribution for families with seniors, with the largest portion in the lowest third—roughly 60% of unattached and other senior-headed families, and over 80% of senior couples.
- Of the nearly 3.6 million seniors covered in the 2000 Survey of Labour and Income Dynamics, about 1.3 million received the GIS while approximately 206,800 eligible individuals did not. The theoretical annual cost of payments for these eligible non-recipients was roughly \$300 million.
- In order to receive the GIS, individuals must apply annually. A large portion of GIS recipients do this automatically by filing an income tax return. Anyone else must apply directly to Social Development Canada. Overall in 2000, only 41% of those who needed to apply actually did so.

## ■ Youth and the labour market

... p. 28

- Youth (aged 15 to 24) made significant strides in the labour market during the recent period of economic growth from 1997 to 2004, after major declines for most of the 1990s.
- Employment growth was stronger for young women than for young men, resulting in a higher proportion of young women than young men working in 2004. The trend was particularly evident for those 15 to 19.
- Major growth took place in industries more likely to hire young people, especially teenagers: retail trade, and accommodation and food services. More women than men tend to take jobs in these industries—as cashiers, salespersons, or food and beverage servers.
- Some of the industries more likely to hire young men were not as strong during this period. Although teenage boys were able to find jobs in construction, their share of employment in manufacturing, natural resources, agriculture, and transportation and warehousing declined.

## ■ What's new?

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# Out-of-pocket spending on prescription drugs

Jacqueline Luffman

**P**rescription drugs have had a huge effect on our lives. Seniors continue to enjoy a normal life because of heart medications, hospital stays are reduced because of pain relief medications, untold deaths are prevented by vaccinations and antibiotics, and so on. With the advent of new vaccines, cancer therapies and other potential 'wonder' drugs, pharmaceuticals are becoming a large factor in the overall cost of health care. Since 1997, government expenditure on drugs has exceeded physician services, and ranks second only to hospitals (CIHI 2004). The elderly have greater health care needs than younger people and tend to use more health services. This, coupled with population aging, means that health care costs can be expected to increase in the coming years.

Unlike other aspects of the health care system, no universal coverage is in place for prescription drugs. Nevertheless, they are a common household expense, with over 300 million prescriptions filled each year—about 10 for each man, woman and child (CFHCC 2002).<sup>1</sup> In 2002, over 6 in 10 households reported out-of-pocket spending on prescription drugs totalling \$3 billion.

In recent years, government cutbacks have led to concern that Canadians may be increasingly bearing the brunt of health care costs themselves—for everything from drugs to home care. Although public insurance is available for prescription drugs in all provinces, coverage varies widely and often depends on age and income.<sup>2</sup> Employer-sponsored private health care plans often offer some type of prescription drug coverage, but such plans are not mandatory and vary greatly in terms of coverage, method of reimbursement, co-payments, and deductibles. People with no coverage (such as the self-employed) can enrol in private plans.

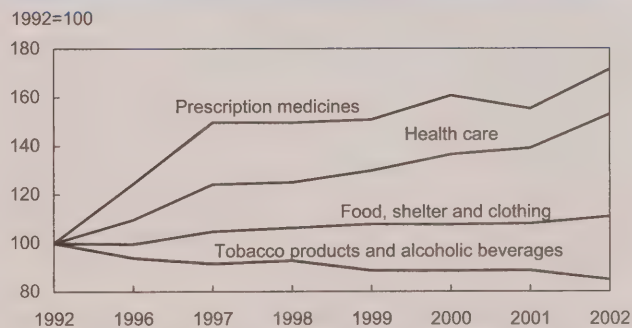
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This study explores out-of-pocket prescription drug spending using the Family Expenditure Survey and the Survey of Household Spending (SHS) (see *Data sources and definitions*). Questions explored include: Are Canadians spending more than previously? Does spending increase with household income? Are seniors paying more than younger families? Which households spend a high percentage of income on prescription drugs? Does spending vary by region?

## Still a small portion of the overall budget

While out-of-pocket spending on prescription drugs remains a small percentage of the overall household budget (less than 1%), the average expenditure rose 71% (in 2002 dollars) between 1992 and 2002—from \$127 to \$218 (Chart A). (Among those who reported out-of-pocket spending, the average was \$222 in 1992 and \$378 in 2002.) In comparison, overall household health care expenditure rose 53%, while food, clothing and shelter increased only 11%.

**Chart A Household spending on prescription drugs jumped over 70% in 10 years.**



Sources: Family Expenditure Survey (1992, 1996), Survey of Household Spending (1997–2002)

Note: Based on constant dollars.

<sup>1</sup> Includes prescription drugs.

### Data sources and definitions

The **Survey of Household Spending (SHS)** is an annual survey conducted since 1997. It gathers detailed information about household spending during the previous calendar year. The survey covers about 98% of the population in the 10 provinces. People living in residences for senior citizens (such as nursing homes) as well as those in all types of institutions (including hospitals and prisons) are excluded. Data for the territories were collected for the years 1997 to 1999 but sampling variability precludes release.

The SHS samples over 20,000 households. For 1997 and subsequent years, sample size was approximately 50% larger than for the former **Family Expenditure Survey** (1992 and 1996). As a result, some caution must be taken when comparing expenditure data over time. Definitions for prescription drug expenditures are comparable for the two surveys. For more information on the Survey of Household Spending, see Statistics Canada 2002.

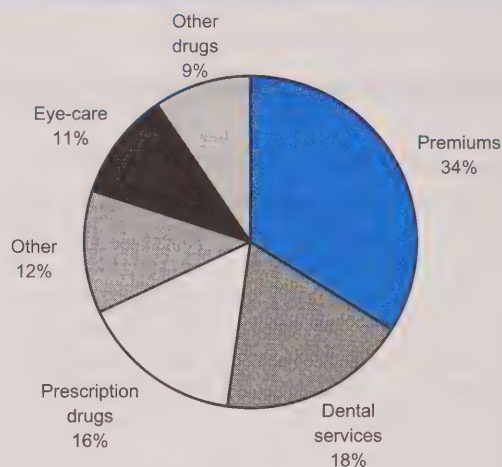
**Out-of-pocket spending on prescription drugs** refers to expenditures for medicines, drugs and pharmaceutical products prescribed by a doctor. Expenditures are amounts not covered by insurance (such as exclusions, deductibles and expenses over limits), and exclude payments for which the household is reimbursed. Prescription drugs taken while in the hospital are excluded since they are paid for by the province.

In **senior households**, at least one person was aged 65 or over—approximately 2.8 million households. In senior couple households (992,000), at least one spouse was 65 or older (in 88% of cases, both individuals were in this situation). Just over one million seniors lived alone.

Rising out-of-pocket expenses are likely due, in part, to the introduction of new drugs, which are invariably more expensive (CP 2004). Indeed, drug prices (as measured by the consumer price index for prescribed medicines) increased steadily from 1992 to 2002, generally in step with overall inflation.<sup>3</sup> Another contributing factor is the higher volume of drug use resulting from a larger as well as an aging population. Canadian retail pharmacies filled 361 million prescriptions during 2003, a jump of 7.9% from 2002 (McGovern 2004). Also, as a result of shorter hospital stays, drugs administered in hospitals and covered under medicare are being paid for by patients themselves once they are released.

Prescription drug spending made up about 16% of total health care spending in 2002—little changed from 1992 (Chart B). Health insurance premiums accounted for a larger portion (31% in 1992 and 34% in 2002).<sup>4</sup>

**Chart B Health insurance premiums account for the largest share of health care expenditures.**



Source: Survey of Household Spending, 2002

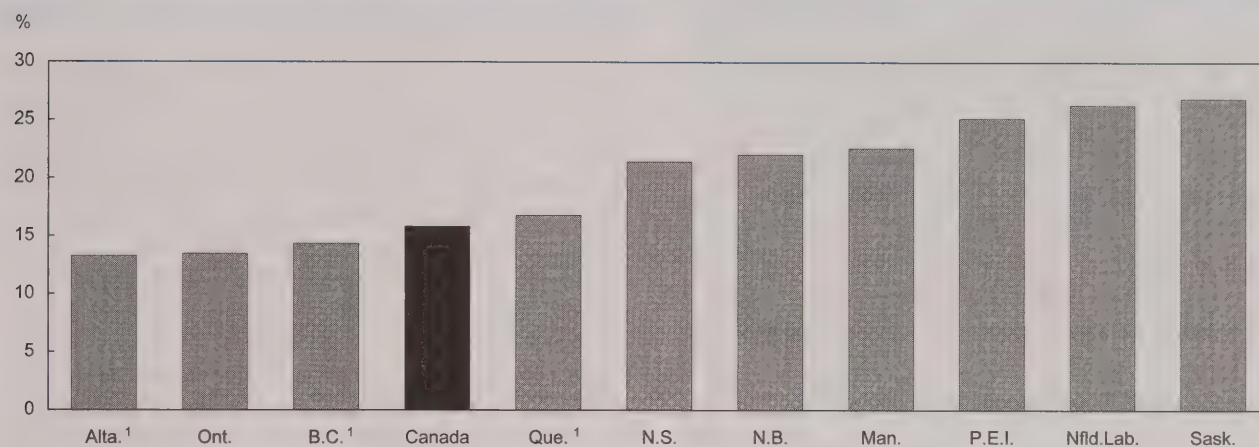
Even if households qualify for provincial drug plans, many provinces require an additional premium to cover expenses. Deductibles also differ by province. As a result, the portion paid by the household varies widely by province, reflecting the diversity of drug plans as well as age and health of the population. In 2002, Saskatchewan families spent 27% of their health care dollars on prescription drugs (about \$386). Alberta and Ontario spent the least, about 13% (\$264 and \$188) (Chart C).<sup>5</sup>

### Drug expenditures vary greatly

Some households incur much higher prescription drug expenses than others. While this is so for relatively few people,<sup>6</sup> many argue that it goes against the fundamental objective of Canadian health policy (Canada 2002). In some cases, those facing a significant financial burden may discontinue or not even begin treatment requiring expensive medications.

One of the recommendations in the 2002 Senate report on the health of Canadians was that provinces and territories should put in place programs to ensure that households would never have to pay more than



**Chart C The portion of out-of-pocket health care expenditures for prescription drugs varies by province.**

Source: Survey of Household Spending, 2002

<sup>1</sup> Had public health-care premiums in 2002.

3% of their after-tax income for prescription drugs (Canada 2002). Most households spending this much would pay out over \$1,000 annually. According to the SHS, about 7% of households spent more than the recommended 3% in 2002 (Table 1), ranging from 16% in Saskatchewan to 3% in Ontario. Between 1997 and 2002, Nova Scotia experienced the largest percentage point increase.

**Table 1 Households spending more than 3% of after-tax income on prescription drugs**

	1997	1998	1999	2000	2001	2002
	%					
<b>Canada</b>	<b>5.9</b>	<b>5.8</b>	<b>6.1</b>	<b>6.3</b>	<b>6.2</b>	<b>6.5</b>
Newfoundland and Labrador	8.9	8.8	8.8	8.9	8.6	10.6
Prince Edward Island	10.4	11.8	10.7	13.2	12.9	11.7
Nova Scotia	6.0	6.8	6.6	7.8	15.0	9.3
New Brunswick	8.0	8.0	9.0	8.5	11.0	10.2
Quebec	7.6	7.2	7.3	8.9	8.9	9.5
Ontario	4.0	4.1	4.5	3.6	3.0	3.3
Manitoba	8.8	8.0	8.0	10.5	8.5	10.3
Saskatchewan	15.9	15.6	14.9	15.8	16.4	15.9
Alberta	5.5	5.1	5.6	6.4	5.6	5.2
British Columbia	4.0	4.3	5.0	4.2	5.3	5.7

Source: Survey of Household Spending

Another way to examine changes in out-of-pocket prescription drug spending is to divide those reporting the expenditure into quartiles (Table 2).<sup>7</sup> The three lowest quartiles do not spend much. Rather, it is the top 25% (highest quartile) that accounts for the majority of expenditures (72%). Between 1992 and 2002, expenditures by this group increased more, even after controlling for inflation.

A large proportion of these families were senior households (43%). Also, their major source of income was more likely to be from government transfer payments (such as OAS, GIS, or other social assistance), and they were more likely to have health premium expenditures. In contrast, the lowest quartile tended to be one-person, non-senior households. They were half as likely to have their major source of income from government sources and not as likely to report health premiums.



**Table 2 Prescription drug spending**

	Amount		Share	
	1992	2002	1992	2002
Expenditure quartile	\$ (2002)		%	
Lowest	24	32	2.7	2.5
Second	73	101	9.7	7.8
Third	170	237	15.7	18.3
Highest	638	942	71.9	71.5
Average	222	326	...	...
Median	100	170	...	...

Sources: Family Expenditure Survey, Survey of Household Spending

### Senior households spend the most

The financial burden of prescription drugs on fixed-income households has received widespread publicity. Seniors in this position are considered the most vulnerable because they are less likely to have private insurance.<sup>8</sup> They are also more likely to have chronic

health problems requiring regular medication. As a result, all provinces have introduced some form of drug plan for those 65 and over. Despite these public plans, senior households are still more likely to report out-of-pocket prescription drug spending and to have higher-than-average expenditures.

In general, among households with prescription drug expenses, total spending is less for senior households than for other households—\$42,400 in 2002, compared with \$67,300 for non-senior households (Table 3).<sup>9</sup> More than three-quarters of households with at least one senior reported prescription drug spending, at an average of a little more than \$500 (about 1.2% of their total spending that year). Prescription drugs make up the largest portion of out-of-pocket health care spending for senior households; some 27.3% of their health care budget was allocated to this item compared with 17.7% by non-senior households.<sup>10</sup> For seniors living alone, the expense accounted for an even larger share (29.0%). This same group also spent a slightly higher proportion of their total budget on prescription drugs (1.5%) compared with all senior households (1.2%) and non-senior ones

**Table 3 Health care spending of households with prescription drug expenditures**

	Total households	Senior households <sup>1</sup>			Non-senior households
		Total <sup>1</sup>	Couples	One person	
<b>Households reporting prescription drugs</b>	<b>7,828,100</b>	<b>2,171,500</b>	<b>794,400</b>	<b>756,400</b>	<b>5,656,600</b>
Proportion of all households (%)	65.1	77.6	80.1	74.9	61.3
Income before taxes <sup>2</sup> (\$)	60,022	42,468	45,219	22,545	66,780
Government transfers major source (%)	22.1	57.8	58.7	76.4	8.5
			\$		
Total household spending	60,377	42,416	47,465	23,130	67,272
Health care spending	1,851	1,899	2,268	1,211	1,833
Supplies	37	65	78	54	26
Non-prescription drugs	158	148	163	115	161
Dental services	340	334	442	170	342
Premiums	586	490	597	227	622
Prescription drugs	378	518	619	352	324
Share of health care (%)	20.4	27.3	27.3	29.0	17.7
Share of household spending (%)	0.6	1.2	1.3	1.5	0.5

Source: Survey of Household Spending, 2002

1 All households with at least one person 65 or older.

2 Earnings, investment income, government transfers and other income.

(0.5%).<sup>11</sup> Senior households with prescription drug expenses also tended to be on a fixed income—almost 60% relied on government transfer payments as their major source of income compared with less than 10% of non-senior households.

### Explaining spending patterns

Many factors work in combination to explain why some households spend more than others on prescription drugs. Naturally, health and lifestyle factors are among the most important. While the amount spent on health care premiums is available in the SHS, quality and details of coverage are not known. However, one can look at how prescription drug spending is distributed throughout the population and which household characteristics might precipitate higher or lower spending.<sup>12</sup> Because 35% of respondents did not report a drug expenditure in 2002, a regression technique that can account for many zeros was used to predict expected mean values of prescription drug spending. This allowed them to remain in the sample. The Tobit regression model is a powerful tool that examines the importance of a particular variable by holding the others constant (see *Tobit regression model*).

### Region

Since prescription drug policy lies mainly under provincial jurisdiction, location clearly affects how much a household spends on prescription drugs. In fact, controlling for household type, income and other characteristics showed province of residence to be significantly associated with prescription drug spending.

Ontario families spent the least (\$257 in 2002) on prescription drugs (Table 4). Ontario's public drug benefit plans are generally limited to seniors, social assistance recipients, and heavy users. However, non-seniors may have access to high-quality private drug plans through an employer. Indeed, employees in high-wage, unionized, full-time, and permanent jobs as well as those in large firms are much more likely to have all types of non-wage benefits (Marshall 2003). This is certainly true for public servants and auto workers in Ontario (whose jobs are largely unionized). An estimated 62% of Ontarians are covered by private drug plans, the highest level in Canada (AMFGTR 2000). Smaller, less industrialized provinces are less likely to have private plans that cover expenses not picked up by the public plan (CFHCC 2002).

### Tobit regression model

Tobit regression is commonly used to analyze household-based expenditure surveys. It is designed to take into account households reporting no expenditures during any year. Some expenditures such as food, shelter and utilities are reported by virtually all participants, but many expenditures are not universal because of individual preference. The Tobit model is used to handle censored data where an expense is not universal.

About 35% of households did not report any out-of-pocket prescription drug expenditures in 2002. In this case, a Tobit model can be used to estimate the relationship between the independent variables and the amounts reported for all households, including those with no prescription drug expenditures. The results in Table 4 are the expected value of expenditures calculated from the estimated coefficients using a Tobit model and the mean values of the variables. The variables in the model were screened for outliers. Households with no before-tax income were removed from the analysis.

Notably, some differences exist between those reporting prescription drug expenditures and those not reporting any. Reasons for the latter are difficult to discern and may vary each year. Those who reported no prescription drug expenditures in 2002 were more likely to be one-person households (non-senior), younger, and less likely to spend on health premiums and other types of health care (dental care, eye care). It is certainly plausible that these younger households were generally healthier and therefore less likely to need prescription drugs—at least in that particular year. On the other hand, it is also possible that those with no prescription drug insurance (about 55% of those reporting no prescription drug expenses also reported no health premiums) may have been deterred by the expense (see *Measuring out-of-pocket spending on prescription drugs*).

Some provinces face greater challenges than others in meeting the health care needs of their citizens. Saskatchewan families had an average expenditure of \$415, the highest in Canada. Saskatchewan also has the highest percentage of senior citizens (15%) and one of the highest proportions of Aboriginal people (13%).<sup>13</sup> In addition, the large farming community means that many people have no access to prescription drug insurance through employment. (About 21% of the population are self-employed—the highest proportion in Canada.) Senior couple households in Saskatchewan had an average expenditure of \$1,044, the highest of all provinces.



**Table 4 Tobit mean expected values of prescription drug spending for all households**

	All households	Couples with at least one senior	One person households
<b>Total</b>	<b>12,021,000</b>	<b>992,000</b>	<b>3,049,000</b>
		\$	
Average prescription drug spending <sup>1</sup>	318	561	189
<b>Household income before taxes</b>			
Quartile 1 (less than \$26,176)	290*	636	202*
Quartile 2 (\$26,176 to \$48,999)	357	546	184
Quartile 3 (\$49,000 to \$78,149)	323	509	159
Quartile 4 (\$78,150 and over)	304	496	112
<b>Major source of income</b>			
Government transfers	389*	609	239
Other	299	498	157
Homeowner	348	555	213
Renter	262*	599	171
No spending on tobacco products	318*	556	207
Spend on tobacco products	318	579	150
Pay health premiums	358*	603	220*
No health premiums	270	496	161
<b>Region</b>			
Atlantic provinces	403*	770*	243*
Quebec	354*	742*	219*
Ontario	257	333	133
Manitoba	370*	820*	260*
Saskatchewan	415*	1,044*	347*
Alberta	321*	591*	198*
British Columbia	335*	560*	173*
Urban household	299	515	168
Rural household	345	607	218
<b>Earners in household</b>			
No full-time earner	359	569	215
One full-time earner	284*	504	135*
Two full-time earners	295	442	...
3 or more full-time earners	310	...	...
No part-time earner	309	562	200
One part-time earner	310*	544	146
Two part-time earners	370*	625	...
3 or more part-time earners	368*	...	...
Unionized	301*	523	157
Non-union	326	565	195
Female reference person	...	...	246*
Male reference person	...	...	127
Senior in household	460*	...	295*
No seniors	275	...	136
Children under 15	290	...	...
No children under 15	329	...	...
<b>Household size</b>			
1 to 3	313*	...	...
4 or more	332	...	...

Source: Survey of Household Spending, 2002

\* Statistically different from the coefficient of the reference group,  $p < 0.05$ .

1 Includes households with no reported prescription drug expenses.

Families in Alberta (\$321), British Columbia (\$335) and Quebec (\$354)<sup>14</sup> spent less than in the Atlantic provinces (\$403) and Manitoba (\$370)—reflecting differences in prescription drug coverage, and in health and age structure. In Atlantic Canada, government-sponsored plans do not always cover catastrophic drug circumstances; an estimated 30% of Atlantic Canadians would not be covered if they spent a large amount on drugs (AMFGTR 2000).

### Age

Age is an important consideration in explaining differences in prescription drug spending. The presence of a senior in the household significantly increased prescription drug spending (the expected mean value was \$460 compared with \$275 for households with no seniors). However, for senior couple households, provincial variations are still strongly significant, even after controlling for other characteristics. Pre-tax income, for example, was less of a factor than province of residence among senior couple households (Table 4).

### Government transfers

Although spending on prescription drugs seems to decrease as household income rises, most of the differences are not statistically significant. However, the amount spent is a higher proportion of household income for low-income groups than for higher-income ones.

Households whose major source of income was government transfer payments spent more on prescription drugs (expected mean value of \$389), compared with those whose income came mostly



### Measuring out-of-pocket spending on prescription drugs

Data on prescription drug expenditures rely heavily on the respondent's interpretation of the question. Variation in coverage, method of payment, and deductibles in many private and public insurance plans also adds to the complexity. For example, respondents are asked to exclude amounts for which they were reimbursed, but this may be difficult to calculate for some types of insurance. In many cases, beneficiaries must keep receipts to document drug expenditures. Once the deductible amount is reached, they must then submit a claim along with the receipts to receive payment from the government or private plan. This lack of claim–adjudication link may result because some beneficiaries do not remember to make their claims. This has been called the 'shoebox effect' (Anis et al. 2001).

In addition, households with at least some prescription drug expenditures covered by public provincial programs (such as seniors or those on social assistance) may nevertheless report expenditures or report more than the maximum allowable under a provincial prescription drug plan. Reasons include:

- In some cases, insurance premiums for a provincial prescription drug plan may have been reported as prescription drug spending.
- People who change insurers may not request the required documentation from their previous insurer to ensure that they do not spend more than the maximum.
- Prescription drug spending while persons are temporarily outside their home province may not be covered under the provincial plan.
- Spending could be on drugs not covered under the provincial formulary.

For more information, see <http://www.statcan.ca/english/freepub/82-401-XIE/2002000/considerations/dr/30dr.htm>.

from other sources such as wages, salaries, self-employment, or investments (expected mean value of \$299). Even though public plans are often designed to help those in low income or on government assistance, the association is significantly positive. Possibly, households lack knowledge about provincial drug benefit plans and do not claim their drug expenditures, or perhaps they are not sure what to report (Millar 1999). For example, among individuals whose main income source was Old Age Security and the Guaranteed Income Supplement, only 31% reported having prescription drug coverage.<sup>15</sup>

### Health premiums

Households paying health premiums spent more on prescription drugs than those not paying premiums (expected mean values of \$358 versus \$270).<sup>16</sup> Among

senior couple households, however, no statistically significant difference existed, probably because most seniors are covered under provincial plans that do not necessarily require a premium.<sup>17</sup>

### Summary

As part of the growing cost of health care, governments are re-examining their role in providing prescription drug benefits (an area not mandated by the Canada Health Act). Provinces are spending a large percentage of their health care dollars for prescription drugs (\$19.6 billion annually across Canada) (CP 2004). Consumers, too, are spending more, even though it remains a small portion of the overall household budget for most. Those who spend the most on prescription drugs (the top quartile) increased their spending between 1992 and 2002. In 2002, their expenditures exceeded \$2.1 billion—72% of total out-of-pocket prescription drug spending that year.

Senior households continue to spend more than a quarter of their health care budget on prescription drugs. The proportion of all households spending more than 3% of their income on prescription drugs (generally a sign of high-cost burden) remains small (7% in 2002). However, the percentage has slowly increased since 1997, and in most provinces it is much higher.

Province of residence is the major factor affecting out-of-pocket prescription drug expenditures, even after taking into account income levels and other household characteristics. As a result, households with similar incomes spend different amounts depending on where they live.

Increases in out-of-pocket prescription drug expenditures can be difficult to explain. While drug prices have remained relatively stable vis-à-vis the cost of living, other factors may be at play. These include rising drug use, the entry of new drugs, changes in the health of the population, an aging population, and consumer expectations and behaviour. Moreover, provincial governments regularly change the conditions of public coverage and may be slow to include new drugs. Those most affected are likely to be the elderly, people with severe medical conditions, and individuals suffering from multiple chronic ailments requiring numerous medications.

## ■ Notes

1 In 2001, public insurance plans covered approximately 46% (\$6.1 billion) of total prescription costs, and private insurance plans covered approximately 34% (\$4.5 billion). Individuals paid the remaining 20% (\$2.6 billion) out of their own pockets (CIHI 2004).

2 For information on provincial and territorial drug subsidy programs including eligibility, premiums, deductibles, co-payments, maximums and Web sites, refer to the appendix in CIHI 2004.

3 There is no completely authoritative price index for all drugs sold in Canada, and each approach has its limitations and assumptions (CIHI 2004). For example, the consumer price index (CPI) for prescribed medicines does not differentiate between new (and more expensive) drugs added to the market versus older drugs that may have decreased in price. However, a review by CIHI found that the CPI and the Industrial Product Price Index for drugs, as well as the Patented Medicine Price Index and provincial drug plan price indexes, have remained virtually unchanged since about 1993 (see CIHI 2004: 41-42).

4 Health insurance premiums are paid for provincial or territorial hospital, medical and drug plans; private health insurance plans; dental plans (sold as separate policies); and accident and disability plans. A new drug plan was introduced in Quebec in 1997 requiring most adults without an employer plan to pay up to \$460 in health care premiums.

5 Residents of Alberta, British Columbia and Quebec must pay public health care premiums, which are included in their total health care expenditures. A public premium is a block payment made through income taxes. Because other provinces do not have premiums, the proportion of health care expenditures accounted for by prescription drugs in these three provinces is lower than if these premiums were excluded from Chart C.

6 One report estimated that 100,000 Canadians experience annual drug expenses exceeding \$5,000 (CFHCC 2002).

7 Quartiles are created by ranking households in ascending order of total prescription drug spending and partitioning the households into four groups of equal size.

8 Although some seniors maintain drug coverage from a work plan after they retire, most private plans are associated with people currently working.

9 The average income of seniors is less than that of non-seniors, but their living expenses tend to be lower as well. For example, they are less likely to have mortgage payments, children in school, and work-related expenses.

10 The total health care expenditure of senior households is reduced in provinces such as Quebec where public drug plan premiums, deductibles and co-payments are lower for seniors than for non-seniors in the same income group. This would have the effect of increasing the proportion of total expenditures accounted for by prescription drugs.

11 Statistically significant difference at the .05 level.

12 For studies that use prescription drug expenditure data from the SHS or FAMEX in the absence of any other health indicators, refer to Todd 2001 and Alan et al. 2003.

13 Aboriginals who are Registered Indians or eligible Inuit have very good coverage because of the federal Non-insured Health Benefits program. Métis and non-status Indians are more likely than the non-Aboriginal population to be underinsured or not insured at all.

14 Again, people in these three provinces must pay public health care premiums.

15 In addition, low-income families may be covered by plans with very high expenditure thresholds. And although individuals on social assistance may receive prescription drugs virtually free of charge, some plans require recipients to make co-payments or pay dispensing fees.

16 In addition to prescription drugs, the private insurance premium category in the SHS includes supplementary coverage and extended benefits. The public premium category includes public hospital and medical plans as well as drug plans. Thus, premiums may not be related to prescription drug expenditures. It is impossible with the SHS to determine whether a household has prescription drug insurance per se (that is, premiums are assigned to their respective private or public premium categories, while deductibles and co-payments count as out-of-pocket expenditures).

17 Many provinces reduce premiums (if applicable), deductibles and co-payments for seniors. This finding may indicate that provincial plans are more similar among seniors than among other demographic groups.

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# Post-retirement employment

Grant Schellenberg, Martin Turcotte and Bali Ram

Individuals enter retirement in many different ways. Some retire from a long-term job, making a clean transition from work to leisure. Others take less direct routes, perhaps paring back their work hours, experiencing a spell of unemployment, or changing jobs or even careers late in their working life. There are also some who retire and later return to the workforce. This situation is becoming more common as retirees increasingly find themselves in good health and with the education and skills needed to compete in the job market. Indeed, demand for their skills may increase in the coming years as baby boomers retire and the face of the labour force changes. Using the 2002 General Social Survey, this article examines the latter group: individuals who return to paid employment after an initial retirement (see *Data source and definitions*).

Retired individuals were asked if they had done any paid work, at any time, at any job or business after their first retirement. Just over one-fifth (22%) of recent retirees said they had done so.<sup>1</sup> Another 4% said they had looked for a job, but had not been able to find one.<sup>2</sup>

## Characteristics associated with post-retirement employment

Various characteristics influenced the likelihood of returning to work after an initial retirement (Table 1). Men were slightly more likely than women (predicted probabilities of 23% and 15% respectively). Health was also a key consideration. Individuals in fair or poor health were far less likely to return to work than those whose health was excellent (predicted probabilities of 12% and 24% respectively).

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## Data source and definitions

The 2002 **General Social Survey** targeted all persons 45 and over residing in the 10 provinces, excluding full-time residents of institutions.

The survey used a subjective definition of **retirement** involving several steps. First, respondents who said their main activity during the past 12 months was 'retired' were identified as retirees. Individuals who did not indicate retirement as their main activity were asked if they had ever retired, and those who said yes were also identified as retirees. Those who still responded no were asked a follow-up question that probed the issue in considerable detail, and if they were able to answer positively to any part of this question, they were also deemed to be retirees. Respondents who had never worked, had left the labour force before age 30, or did not answer the questions on retirement were excluded from the study.

**Recent retirees** are individuals who first retired during the years 1992 to 2002 inclusive and were aged 50 or older at the time.

Post-retirement employment was more common among those retiring from certain occupations and industries. Individuals from professional occupations were most likely to return to work (predicted probability of 27%), followed by managers and technicians (21%). These figures may reflect greater and more attractive employment opportunities available to these individuals—jobs offering good pay, interesting work and few physical demands.

From an industry standpoint, retirees from information, culture and recreation as well as construction were most likely to return to the workforce. Employment in construction is often project-oriented, so retirees here have more opportunity to find employment in temporary, project-specific jobs. Furthermore, plumbers, carpenters, electricians and others in skilled trades may be well-positioned to supplement retirement income through self-employment. In fact, 31% of retirees from the construction industry were self-employed prior to their first retirement, compared with 17% of all retirees.

**Table 1 Predicted probability of recent retirees having returned to paid employment**

	%
<b>Sex</b>	
Men	23
Women	15*
<b>Health at retirement</b>	
Excellent	24*
Very good	19
Good	21
Fair/poor	12*
<b>Occupation prior to retirement</b>	
Manager	21*
Professional	27*
Technical	21*
Clerical	20*
Sales and service	15
Other blue collar	18
Trades	17
<b>Industry prior to retirement</b>	
Agriculture and primary	19
Utilities, transportation and warehousing	15
Manufacturing	13*
Construction	28*
Finance, insurance, real estate, rental and leasing; professional and business services	24
Trade	20
Education, health care and social assistance	21
Information, culture and recreation	32*
Accommodation, food and other services	17
Public administration	24
<b>Age at retirement</b>	
50 to 59	25
60 to 64	13*
65 or older	18*
<b>Type of employment prior to retirement</b>	
Employee	19
Self-employed	19
<b>Selected reasons for retirement</b>	
<b>Early retirement incentive</b>	
Yes	27*
No	18
<b>No longer enjoyed the work</b>	
Yes	28*
No	18
<b>Retirement financially possible</b>	
Yes	17*
No	23

Source: General Social Survey, 2002

\* Significantly different from the reference group  $p < 0.05$ .

Probabilities were obtained by setting covariates to mean values.

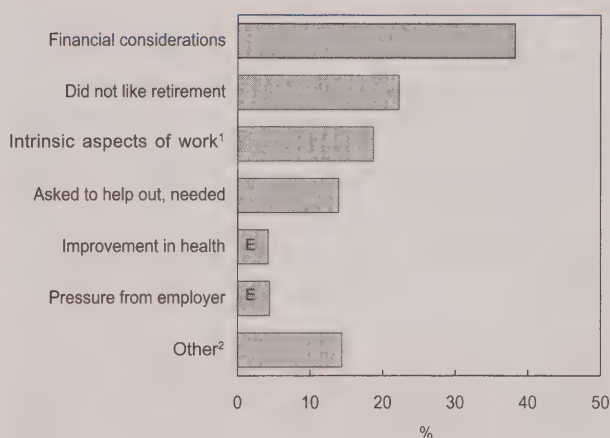
Note: Other variables, including marital status, immigration status, and receipt of pension income were not significantly associated with the likelihood of returning to paid employment and were omitted from the model.

The likelihood of returning to paid employment was also associated with age. Individuals who first retired before age 60 were more likely to return to work than those who retired later. Perhaps those under 60 had concerns about their financial preparations or were not yet psychologically ready for retirement.

Finally, the likelihood of post-retirement employment was linked to specific retirement reasons—most notably, receipt of an early retirement incentive and no longer enjoying one's work. In the latter case, post-retirement employment may reflect the efforts of some individuals to start a new career or to find employment in a more satisfying work environment. In addition, individuals who retired for reasons other than financial were more likely to return to work, likely in an effort to improve their financial situation.

### Reasons for post-retirement employment

Retirees returning to paid employment were asked why they did so. Although financial considerations was mentioned most often, it was cited by considerably less than half (38%) (Chart). This suggests that non-financial reasons were important as well. Indeed, 22% of retirees returned to employment because they did not like retirement, 19% mentioned the intrinsic

**Chart Financial issues by far the most common reason for returning to work**

Source: 2002 General Social Survey

¹ Such as social contact, challenging tasks, wanting to feel useful.

² Includes 'caregiving duties no longer required' and 'family pressure.'



rewards offered by work (challenging tasks, social contacts, sense of purpose), and 14% felt they were needed or wanted to help out. Overall, 55% cited at least one of these three non-financial reasons. Other considerations, such as pressure from family members, improved health, or no longer having to provide caregiving, were cited by less than 5%.

The likelihood of returning to work for financial reasons did not vary by sex or educational attainment (Table 2). Voluntary and involuntary retirees differed noticeably on this point, however with financial considerations being cited more often by those who left involuntarily (54% versus 33%). Similarly, individuals who retired because of health problems, downsizing or unemployment were more likely to return to work for financial reasons.

Among the 4% of recent retirees who looked for a job but were unsuccessful in finding one, 40% cited wanting to return to work for financial reasons, 39% non-financial reasons, and 22% both.

**Table 2 Reasons why recent retirees returned to work after first retirement<sup>1</sup>**

	Financial considerations	Intrinsic aspects of work	Did not like retirement
		%	
<b>Sex</b>	38	19	22
Men	38	21	19
Women	38	15	27
<b>Educational attainment</b>			
Less than high school	37 <sup>E</sup>	19 <sup>E</sup>	23 <sup>E</sup>
High school	38	16 <sup>E</sup>	28 <sup>E</sup>
Postsecondary certificate or diploma	38	18 <sup>E</sup>	18 <sup>E</sup>
University degree	39	21 <sup>E</sup>	19 <sup>E</sup>
<b>Nature of retirement</b>			
Voluntary	33	21	19
Involuntary	54	12 <sup>E</sup>	30 <sup>E</sup>
<b>Selected reasons for first retirement</b>			
Financially possible	31	20	22
Wanted to do other things	32	21	19 <sup>E</sup>
No longer enjoyed job	37 <sup>E</sup>	18 <sup>E</sup>	18 <sup>E</sup>
Health	52	11	17 <sup>E</sup>
Downsizing	51	12	34 <sup>E</sup>
Unemployment	68	F	F

Source: General Social Survey, 2002  
1 Top three reasons.

## Hours worked after retirement

Many retirees who returned to paid employment did so on a part-time basis (less than 30 hours per week)—37% of men and 58% of women (Table 3). Individuals who initially retired at 60 or later were more likely to work part time than those who retired before 60.

Work hour preferences are most divergent among men and women with higher levels of education. The difference in the incidence of part-time employment between men and women with high school or less (10 to 12 percentage points) was far smaller than for those with a postsecondary certificate or diploma (26 percentage points) or a university degree (33 points).

Finally, for retirees who were employed just prior to their first retirement, post-retirement employment often involved a reduction in the number of hours worked. Of the men returning to paid employment, virtually all had worked full time prior to their first retirement. However, over one-third of them moved to a part-time schedule when they took post-retirement employment. Similarly, among women, of the 86% who were employed full time prior to their first retirement, over half (55%) moved to a part-time schedule when they returned to work. This suggests that many workers considering retirement might be willing to continue working if switching to part-time were an option.<sup>3</sup>

**Table 3 Recent retirees who returned to part-time paid employment**

	Both sexes	Men	Women
		%	
<b>Total</b>	<b>45</b>	<b>37</b>	<b>58</b>
<b>Age at first retirement</b>			
50 to 59	41	31	59
60 to 64	48 <sup>E</sup>	46 <sup>E</sup>	52 <sup>E</sup>
65 or older	55 <sup>E</sup>	49 <sup>E</sup>	67 <sup>E</sup>
<b>Education</b>			
Less than high school	40 <sup>E</sup>	36 <sup>E</sup>	48 <sup>E</sup>
High school	51	47 <sup>E</sup>	57 <sup>E</sup>
Postsecondary certificate or diploma	49	36 <sup>E</sup>	62 <sup>E</sup>
University degree	38	27 <sup>E</sup>	60 <sup>E</sup>

Source: General Social Survey, 2002



## Conclusion

In general, post-retirement employment has been most prevalent among individuals who initially retired in their 50s and were well positioned to re-enter the workforce. They were in good health, had postsecondary educational credentials, and valuable skills and experience—often gained from prior employment in professional and managerial occupations.<sup>4</sup> While financial considerations were the motivation for some, the intrinsic aspects of work were important for others.

Looking ahead, a number of factors may influence the prevalence of post-retirement employment in Canada—educational attainment for one. The proportion of individuals aged 55 to 64 with a postsecondary educational credential increased from 25% to 48% between 1990 and 2004, while those with less than high school declined from 54% to 27% (Statistics Canada 2005).<sup>5</sup> Hence, the upcoming cohort of retirees will be well educated and equipped to re-enter the workforce after retirement if they so choose.

Also, individuals in their retirement years will be in better health than their predecessors. A recent Statistics Canada study compared the health of persons aged 50 to 67 (as well as other age groups) in 1978-79 and 1996-97 and concluded that “Lower mortality rates overall, and for cardiovascular disease in particular, as well as lower odds of heart disease, high blood pressure, arthritis and activity limitation suggest that recent cohorts are healthier than the cohorts who preceded them.” (Chen and Millar 2000, 19). The implication is that health considerations will be an obstacle for fewer retirees wanting to re-enter the workforce.

Finally, unlike retirees in the 1990s, those in the years ahead will face a labour market where demand for their labour is high. With greater employment prospects available, older workers who might otherwise have opted to retire from long-held jobs may instead capitalize on the opportunity for a career change.

On the other hand, in coming years, more new retirees will be women—a result of their increased participation in the labour market over the last few decades. Among individuals aged 45 to 54 working full year, full time in 2000, 46% were women compared with only 29% in 1980. If women now approaching

retirement behave similarly to those who retired between 1992 and 2002—that is, their incidence of post-retirement employment remains lower than men’s—then the proportion of new retirees returning to the workforce may not grow as quickly.

## Perspectives

### ■ Notes

1 Retired respondents were asked in what month and year they first retired and, if they subsequently took a paid job, in what month and year they last retired. In some cases, the month and year of the first and last retirement were the same, raising doubt as to whether significant post-retirement employment was undertaken. If these respondents are excluded, the incidence of post-retirement employment drops from 22% to 20%. In this study, the analysis of post-retirement employment is based on all respondents who said they took paid employment after their initial retirement (that is, the 22% figure).

2 The majority of these job seekers (63%) cited unemployment or downsizing as the reason for their initial retirement. Information on individuals who looked for a job but did not find one is not included here, since the small number of respondents limits the extent to which reliable comparisons across demographic and labour market characteristics can be made.

3 Aside from hours of work, the 2002 General Social Survey did not collect information on the kind of employment undertaken by retirees who re-entered the workforce. Longitudinal surveys, such as the Survey of Labour and Income Dynamics, are better equipped to explore changes over time.

4 More specifically, of all recent retirees who returned to the workforce, 64% initially retired before age 60, 63% were in very good or excellent health, 54% had a postsecondary educational credential, and 39% had been employed previously in a managerial or professional occupation.

5 The absolute number of older workers with less than high school education also declined, from 1.3 million in 1990 to 909,000 in 2004.

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# Who's missing out on the GIS?

Preston Poon

**T**he 2005 federal budget directed more spending to help low-income seniors by increasing Guaranteed Income Supplement (GIS) payments by roughly \$2.7 billion (more than \$400 per year for a single senior and almost \$700 per couple for those receiving the maximum). The GIS was established in 1967 as an additional benefit to low-income seniors receiving Old Age Security (OAS). These programs, plus the maturation of the Canada and Quebec Pension Plans (C/QPP) and an increased use of private pension plans have reduced low income among seniors significantly over the past decade (Myles 2000). In 1980, roughly 1 in 5 seniors were in low income; by 2003 this had fallen to 1 in 15.<sup>1</sup> According to the 2001 Census, seniors living in low income received two-thirds of their income from OAS and GIS benefits. An additional 20% came from C/QPP.

In order to receive the GIS, individuals must apply annually. For those already receiving the benefit, this can be done automatically by filing an income tax return.<sup>2</sup> If one is not filed, a detailed income statement and application must be submitted to Social Development Canada (SDC). Individuals who lose eligibility because of an increase in income in the previous year (for example, an RRSP lump sum withdrawal) or a change in marital status are required to re-apply the following year if they wish to be re-considered. Eligible individuals unaware of this requirement to re-apply will not receive the benefit. Some may also miss out because they do not fully understand how eligibility is determined—for example, they are unaware that OAS should not be included in calculating their income. This is important since GIS recipients by definition have low income and since many provincial programs are linked to GIS receipt.

The importance of reaching eligible non-recipients was recognized in a House of Commons standing committee, which recommended that SDC address the situ-

ation (Canada 2001). In response, SDC increased outreach activities and simplified application forms. Also, in conjunction with the Canada Revenue Agency, SDC sought out eligible individuals using tax information. Early estimates of the numbers affected ranged from 220,000 to 380,000, while a more recent figure pegged the number at roughly 135,000 for 2002 (Ha 2003; Thompson 2005). Other than these estimates, little is known about these individuals.

Although income is an important indicator of a family's ability to maintain a given standard of living, equally important is wealth, especially since financial assets can easily be converted to cash in times of need (Morissette 2002). Low-income families with little wealth are potentially at risk should unexpected shocks such as sickness or divorce arise.

Two key issues are addressed here. First, to examine whether GIS families are more financially vulnerable than senior non-GIS families, the Survey of Financial Security (SFS) was used to compare the wealth of families receiving GIS and senior families not receiving GIS.<sup>3</sup> Second, the question of who is not applying for GIS even though eligible is answered using the Survey of Labour and Income Dynamics (SLID). In addition, logistic regression models were used to determine which characteristics appear to be associated with whether an eligible individual applies for GIS or not (see *Data sources and methodology*).

## Unattached seniors living alone most frequent GIS recipients

Seniors are found in a variety of situations, ranging from living alone to being a member of a family headed by an adult child (Chart A). According to the 1999 SFS, 1.1 million families had at least one GIS recipient, the largest group being seniors living alone (45%) followed by senior couples (24%). About 20% were non-senior headed families where the relationship of the GIS recipient to the major income earner was parent (60%), other relative (26%), or spouse/

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## The Old Age Security Program

The *Old Age Security Act* of January 1, 1952, replaced legislation from 1927 requiring the federal government to share the cost of provincially run, means-tested, old age benefits. Benefits now include the basic Old Age Security (OAS) pension, the Guaranteed Income Supplement (GIS), and the Allowance. To be eligible, applicants must be Canadian citizens or legal residents of Canada on the day prior to approval of their claim. Benefits are adjusted quarterly (January, April, July and October) to reflect cost-of-living increases measured by the consumer price index. Old Age Security benefits are taxable while the GIS and Allowance are not.

### Old Age Security pension

In 2004, the federal government paid out roughly \$21.9 billion in OAS benefits. For July to September 2005, the maximum was \$476.97 per month. Persons 65 or older are eligible to receive the full benefit if they have resided in Canada for at least 40 years after age 18. In other cases, depending on specific residency status, age and valid immigration standing on or prior to July 1, 1977, an individual may still qualify for a full pension (more information on the Social Development Canada Web site). Those not qualifying for a full pension but residing in Canada for a minimum of 10 years may still be eligible for a partial pension—one-fortieth of the full pension for each full year in Canada after age 18. As well, special measures may apply to immigrants from countries that have a social security agreement with Canada.

### Guaranteed Income Supplement

Of the 4.2 million OAS recipients in June 2005, about 1.6 million also received the GIS, which is payable to OAS recipients with low or no other source of income. GIS

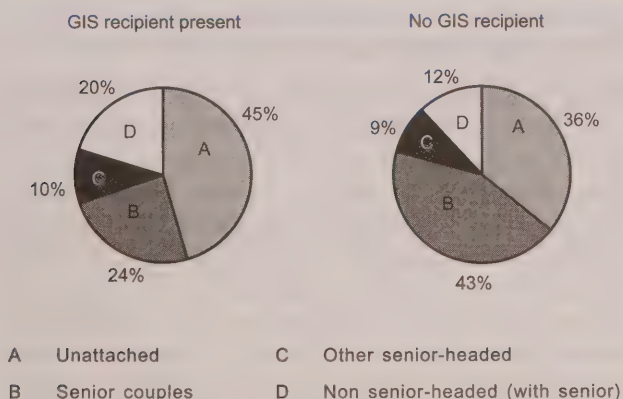
recipients must re-apply annually by filing an income tax return or completing an income statement and application. The payment year is July to June. For July to September 2005, the maximum benefit for a single person, or a married person whose spouse did not receive OAS or the Allowance, was \$566.87 a month; for someone married to an OAS or Allowance recipient, the maximum was \$369.24. GIS benefits are income-tested—that is, they are reduced depending on marital status and income level. For July to September 2005, the annual income ceiling for a single recipient was \$13,608. For those with a spouse not receiving OAS, the ceiling was \$32,976 while for those with a spouse receiving OAS, it was \$17,760.

### Allowance and Allowance for the survivor

In June 2005, close to 97,000 persons received the Allowance or the Allowance for the survivor. This is income-tested and paid to a person aged 60 to 64 who is the spouse or common-law partner of an OAS/GIS recipient, or whose spouse or common-law partner has died. It is designed to help survivors and couples living on only one OAS pension. In July 2005, the maximum Allowance benefit for the spouse or partner of an OAS recipient was \$846.21 a month (equal to the maximum OAS plus the maximum GIS married rate), while the maximum benefit for a survivor was \$934.24 a month. From July to September 2005, the annual income ceiling for the spouse or common-law partner of a GIS recipient was \$25,392 and \$18,624 for a survivor.

Sources: Social Development Canada: *Old Age Security Payment Rates, Canada Pension Plan and Old Age Security – Monthly Statistical Bulletins*, ISP Stats Book 2003.

**Chart A GIS recipients are more likely to be living alone.**



Source: Survey of Financial Security, 1999

grandparent/sibling (14%). Among non-GIS families with a senior, the largest group was senior couples (43%) followed by unattached seniors (36%).

### Median wealth of unattached GIS recipients one-sixth that of unattached non-recipients

In general, GIS families had lower median income, assets and net worth than their non-GIS counterparts. Median after-tax income was almost twice as high for non-GIS families (Table 1). The greatest differences in terms of wealth were found for unattached seniors where those not receiving GIS had roughly six times more in total assets, nearly seven times more in financial assets, significantly more homeowners, and median net worth nearly six times higher. Homeownership is especially important for seniors since the vast majority are mortgage-free, making direct shelter costs minimal.



**Table 1 Income, assets, debt and net worth of families with seniors**

	Unattached		Senior couples		Other senior-headed		Non-senior-headed	
	No GIS	GIS	No GIS	GIS	No GIS	GIS	No GIS	GIS
<b>Total families</b>	<b>543,000</b>	<b>508,000</b>	<b>661,000</b>	<b>272,000</b>	<b>135,000</b>	<b>112,000</b>	<b>183,000</b>	<b>226,000</b>
<b>Median size</b>	1.0	1.0*	2.0	2.0*	2.4	2.2*	2.5	2.7*
<b>Homeowners (%)</b>	59.4	38.4	86.0	77.8	88.4	73.4	82.3	81.9*
<b>Income</b>	median \$							
Before tax	25,500	13,600	40,900	23,200	55,400	26,600	62,300	50,900
After tax	22,100	13,500	35,600	23,000	47,600	26,400	53,900	46,800
<b>Assets</b>								
Total	242,700	40,600	404,900	159,000	398,300	125,600	351,600	206,400
Financial	27,000	4,000	25,100	7,800	9,800	4,800*	9,000	6,700*
Non-financial	96,000	9,800	161,600	99,900	188,900	79,200	206,300	145,000
Pension	72,300	0	162,000	5,400	96,900	0	77,100	23,200
<b>Debt</b>	0	0*	0	0*	800	0*	3,800	11,000*
<b>Net worth</b>	239,500	40,300	400,200	158,000	358,100	113,400	300,300	165,300

Source: Survey of Financial Security, 1999

\* The difference between no GIS recipient versus GIS recipient present was not statistically significant at the 95% level.

The other family types exhibited similar but smaller differences. Median assets and net worth were roughly three times higher for non-GIS senior couples and other senior-headed families compared with their GIS counterparts. Not surprisingly, differences were smallest for non-senior headed families. Since seniors in these households were not the major income earners, they had less impact on the family's financial situation.

### GIS families were more vulnerable financially

Results were similar for financial wealth. Unattached GIS recipients had median financial wealth one-sixth that of their non-recipient counterparts (Table 2). The differences for senior couples and other senior-headed families were similar, roughly one-third. The idea that GIS seniors in non-senior-headed families may have been sheltered was again found here. The difference between the median levels of financial wealth was not significantly different for non-senior-headed families.

As noted, median after-tax income was lower for GIS families than for their non-GIS counterparts. Indeed, for senior-headed GIS families (unattached, senior couples, and other senior-headed), income levels were significantly lower. For all three family types, virtually all were found in the bottom two-thirds of the after-tax income distribution, with the largest portion in the lowest third—roughly 60% of unattached and other senior-headed families and over 80% of senior

couples. Once again, the picture was not as clear for non-senior-headed families where nearly 30% of the GIS families were found in the top third of the income distribution.

Those in low income with little to no financial wealth are often the most financially vulnerable (Morissette 2002). And GIS families were primarily the ones found to be in the bottom third of both the after-tax income distribution and the financial wealth distribution—nearly 39% of unattached GIS recipients, 36% of other senior-headed GIS families, and just over half of senior GIS couples.

### GIS families less able to handle an unexpected major expense

Another way to examine vulnerability is to look at the capacity to handle an unexpected expense of \$5,000. For those with moderate or high levels of income or financial wealth, the expense could be managed with savings or by selling assets. Significantly more GIS families reported that they either would not be able to manage or would have to borrow to deal with such an expense (Table 3). This reinforces the finding that among senior families in general, GIS families were relatively more vulnerable than their non-GIS counterparts. Roughly half of unattached GIS recipients and senior GIS couples reported they would have to look beyond their own resources to manage the expense;

**Table 2 Financial wealth and income of families with seniors**

	Unattached		Senior couples		Other senior-headed		Non-senior-headed	
	No GIS	GIS	No GIS	GIS	No GIS	GIS	No GIS	GIS
<b>After-tax income</b>								
Lowest third maximum	14,030		26,730		28,400		41,100	
Middle third maximum	19,470		36,900		45,270		61,000	
Lowest third	8.2	60.2	12.7	83.1	9.8	61.5	28.8	36.6*
Middle third	30.1	36.6*	41.1	14.3	34.0	31.9*	32.3	34.3*
Top third	61.7	3.2	46.2	2.6	56.2	6.7	38.9	29.2*
<b>Financial wealth</b>	75,100	13,400	105,900	30,600	70,100	21,700	71,500	42,500*
Lowest third maximum	14,200		40,500		22,900		27,880	
Middle third maximum	65,000		143,750		80,500		90,730	
Lowest third	16.7	51.0	24.1	56.2	19.0	50.4	28.9	36.8*
Middle third	30.4	36.2*	34.6	29.8*	37.1	29.0*	25.2	39.8*
Top third	52.9	12.8	41.3	14.0	43.9	20.6	45.9	23.4
<b>Lowest income and lowest wealth</b>	3.9	38.9	6.2	50.8	4.2	36.0	13.0	20.1*
<b>Highest income and highest wealth</b>	39.8	1.5	29.3	1.3	28.4	3.9	25.0	10.7

Source: Survey of Financial Security, 1999

\* The difference between no GIS recipient versus GIS recipient present was not statistically significant at the 95% level.

the proportion was even higher for other senior-headed families (61%). Just over one-quarter of unattached non-GIS recipients and one-third of senior non-GIS couples would have difficulty. Interestingly, the majority of non-senior-headed families, regardless of the presence of a GIS recipient, would have to borrow or could not manage it.

In terms of spending relative to income, the majority of GIS families spent their family income or more. Spending more than one's income is not in itself troubling; rather, the rate at which a senior dissaves is important. In all cases, compared with their non-GIS counterparts, a greater proportion of GIS families had spending levels equal to or greater than their income.<sup>14</sup>

**Table 3 Unexpected expense of \$5,000 and spending relative to income**

	Unattached		Senior couples		Other senior-headed		Non-senior-headed	
	No GIS	GIS	No GIS	GIS	No GIS	GIS	No GIS	GIS
<b>Unexpected expense (\$5,000)</b>								
Couldn't manage/would borrow	28.9	51.9	33.7	48.3	42.5	60.9	50.5	62.2*
<b>Spending</b>								
Higher than income	9.3	9.4*	7.4	11.1*	18.5	12.0*	12.5	15.0*
Same as income	38.7	56.5	35.4	53.0	34.2	54.0	43.2	54.8*
Less than income	52.1	34.1	57.2	36.0	47.3	34.1*	44.3	30.3

Source: Survey of Financial Security, 1999

\* The difference between no GIS recipient versus GIS recipient present was not statistically significant at the 95% level.



**Table 4 Eligible non-recipients**

	Total	Take-up rate	Application rate
			%
<b>Both sexes</b>	<b>206,800</b>	<b>86.4</b>	<b>41.0</b>
		%	
Men	46.4	83.5	40.8
Women	53.6	88.2	41.2
<b>Age</b>			
65 to 69	28.8	85.4	64.0
70 to 79	44.9	87.2	22.6
80 and over	26.3	86.0	16.3
<b>Region</b>			
Atlantic	5.3	93.4	56.6
Quebec	20.0	90.6	47.1
Ontario	42.8	81.9	35.2
Manitoba/Saskatchewan	8.5	86.3	34.4
Alberta	11.0	80.9	36.5
British Columbia	12.5	85.5	46.1
<b>Economic family</b>			
Unattached	36.5	88.5	35.7
Married couple, non-elderly	4.4	90.9	61.5
Married couple, elderly	39.7	82.9	42.4
Other	19.4	86.0	40.1
<b>Major activity<sup>1</sup></b>			
Working	5.3	68.5	44.1
Retired	79.3	87.1	40.7
Other	8.5	87.2	46.9
<b>Highest level of education<sup>1</sup></b>			
Less than grade 9	35.7	89.5	43.7
Some secondary	23.3	83.3	35.7
High school graduate	16.8	79.6	39.7
Some postsecondary/degree	16.6	82.9	44.2
<b>Health status<sup>1</sup></b>			
Excellent, very good	31.9	84.8	42.8
Good, fair	54.6	86.2	39.6
Poor	5.0	93.5	51.4
<b>Immigrant status<sup>1</sup></b>			
Immigrant	27.3	84.3	40.4
Non-immigrant	68.1	86.6	41.3
<b>Homeownership<sup>1</sup></b>			
Owned by member	72.8	83.8	40.6
Not owned by member	19.8	91.3	42.1
<b>Annual GIS</b>			
Less than \$500	31.4	52.6	33.2
\$500 to \$999	20.2	69.8	36.2
\$1,000 to \$1,999	23.5	83.1	38.5
\$2,000 or more	25.0	94.6	52.6

Source: Survey of Labour and Income Dynamics, 1999-2001

<sup>1</sup> Will not add to 100% because some figures were not available.

Given the financial vulnerability of the population covered by GIS, one would expect that those eligible would apply for it. Is this the case and what are the characteristics of eligible seniors who do not apply?

### Most individuals eligible for GIS received it ...

Of the nearly 3.6 million seniors covered in SLID in 2000, about 1.3 million received the GIS while approximately 206,800 eligible individuals did not.<sup>15</sup> The theoretical annual cost of payments for these eligible non-recipients was roughly \$300 million.

Overall, 86% of those eligible for GIS actually received it (Table 4). Although women made up a larger portion of the eligible non-recipients, they had a significantly higher take-up rate than men: 88% versus 83%. Among the other statistically significant differences: the Atlantic provinces had a higher take-up rate than the provinces west of Quebec. Higher take-up rates were also evident for individuals with the lowest level of education, those in poor health, and those receiving higher payments. Lower rates were noted for those reporting their major activity as working, and those living in a home owned by a household member.

### ...but only 41% of those who needed to apply actually did so

Given that take-up rates include a large portion of individuals whose benefits are automatically renewed through the income tax system, the application rate may provide more insight. Overall, only 41% of those who needed to apply actually did so. Among the statistically significant differences in application rates, however, two characteristics stood out: age and annual GIS payment. The youngest seniors were by far the most likely to have applied—64% compared with 23% for those 70 to 79 and 16% for those 80 and over. In terms of payment, the application rate was highest for those getting \$2,000 or more—53% compared with 33% for those receiving less than \$500.

The Longitudinal Administrative Databank (LAD) yielded similar results to SLID (Table 5).<sup>16</sup> Total eligible non-recipients in LAD numbered 195,000 and the annual cost was \$275 million. Distributions by sex, age, and region were also comparable between the two sources. The LAD overall take-up rate was 87% (89% for women and 84% for men). While trends for



**Table 5 Comparison of application rates between LAD and SLID**

	LAD	SLID
Eligible non-recipients	195,000	206,800
Cost (\$ '000)	275,098	300,711
<b>Age</b>	%	
65 years and older	31.3	41.0
65 to 69	54.9	64.0
70 to 79	19.2	22.6
80 and over	14.2	16.3
<b>Annual GIS</b>		
Less than \$500	21.5	33.2
\$500 to \$999	25.2	36.2
\$1,000 to \$1,999	26.6	38.5
\$2,000 or more	46.8	52.6

Sources: Survey of Labour and Income Dynamics, 1999-2001, Longitudinal Administrative Databank

application rates were also similar, the rates from LAD were lower—an overall application rate of 31%. Again, higher application rates were found for younger seniors and for those eligible for the highest payment.

### Likelihood of applying related negatively to age, positively to payment amount

To further validate the comparison between recipients who had to apply and eligible non-recipients, a logistic regression was run to predict the likelihood of not applying (Table 6). The regression covered all the characteristics in Table 4 for 143,600 recipients and 206,800 eligible non-recipients. Only two variables were significant: age and annual GIS payment.<sup>17</sup>

In general, the likelihood of not applying for GIS when eligible increased with age and decreased with payment amount (Chart B). Eligible persons aged 80 and over were a third to a half as likely to apply for the benefit as persons 65 to 69. Interestingly, the majority of those 70 and older were likely not to apply regardless of the payment amount; that is, the age effect superseded the payment effect. The

age effect may be partially explained by length of time since the last contact with SDC. Those 65 to 69 would have communicated with SDC within the previous five years to apply for OAS, and thus would have a fresher understanding of the GIS program. Attitude toward the government could also be a factor: older seniors may assume that the government will automatically provide them with whatever they are eligible for.

The payment effect is not surprising given that the incentive to apply increases with the amount to be received. At the 95% confidence level, the lowest and third lowest payment groups were significantly less likely to apply than the highest payment group; at 90%, this was true for all three of the lowest payment groups.

### Only one-quarter of eligible persons 66 and over who had to apply actually did

To further examine the age effect, those who turned 65 in 2000 were excluded. This ensured that those remaining in the sample were not individuals who had the opportunity to apply for the GIS at the same time they applied for OAS. This further constraint reduced recipients from 143,600 to 68,900, and eligible non-recipients from 206,800 to 202,800. Since the

**Table 6 Logistic regressions**

	Model 1	Model 2
Intercept	-0.23*	1.01
<b>Age</b>		
65 to 69	reference group	reference group
70 to 79	1.76	0.58
80 and over	2.31	1.13
<b>Annual GIS</b>		
Less than \$500	reference group	reference group
\$500 to \$999	-0.24*	-0.05*
\$1,000 to \$1,999	-0.13*	-0.43*
\$2,000 and more	-0.85	-0.96
Comparisons not involving the reference group (95% level)		
<b>Annual GIS</b>		
\$500 to \$999 versus \$1,000 to \$1,999	not significant	not significant
\$500 to \$999 versus \$2,000 and more	not significant	significant
\$1,000 to \$1,999 versus \$2,000 and more	significant	not significant
<b>Age</b>		
70 to 79 versus 80 and over	not significant	not significant

Source: Survey of Labour and Income Dynamics, 1999-2001

\* not significant at 95%

## Data sources and methodology

The **Survey of Financial Security (SFS)** collects information from households on their income, education, employment, assets and debts. It thus provides information on the net worth (wealth) of Canadian families. Excluded are those living on Indian reserves and crown lands, residents of the territories, members of religious and other communal colonies, members of the Armed Forces living in military camps, and those living in institutions and residences for senior citizens.<sup>4</sup>

The **Survey of Labour and Income Dynamics (SLID)**, is a longitudinal survey composed of six-year panels. A new panel is introduced every three years, so two panels always overlap. Each panel consists of roughly 15,000 households—about 30,000 adults—and covers all individuals in the 10 provinces, excluding persons living on Indian reserves and residents of institutions.<sup>5</sup> The combined overlapping sample for 1999 to 2001 was used in this study.

The **Longitudinal Administrative Databank (LAD)** is a longitudinal 20% sample created from the T1 Family File (T1FF). Once selected, individuals are in the sample whenever they appear in the T1FF. As well, part of each year's sample includes a selection of individuals who appear for the first time, making the sample current and cross-sectionally representative. In 2000, LAD included nearly five million individuals.

The SFS was used to examine the assets, debts and wealth of families with senior members. The senior population (65 and over) was split into four family types: unattached seniors living alone, senior couples living alone, other senior-headed families, and non-senior headed families with a senior resident.<sup>6</sup> Median amounts were calculated for total assets, financial assets, non-financial assets, debts and wealth.

As well, a concept of financial wealth similar to that used in Morissette (2002) was examined: Financial wealth = non-pension financial assets + liquid non-financial assets (such as vehicles) + RRSPs + RIFs – debts (except mortgages). Combined with income, this concept provided information on the relative vulnerability of GIS families compared with their non-GIS counterparts.

To determine the number of eligible GIS non-recipients in 2000, SLID was used.<sup>7</sup> The senior population (65 and over) was divided into four groups based on the SDC marital categories: single, married to a non-pensioner, married to a pensioner, or married to an Allowance recipient. One criterion for GIS eligibility is that individuals must be receiving OAS; thus all non-OAS recipients were classified as ineligible for the GIS.<sup>8</sup> Income as defined for the GIS program was then calculated for each record based on 1999 income, and family level cut-offs were then used to determine eligibility in 2000.<sup>9,10</sup> Records were checked to see if GIS was received in 2000 and the results classified into three groups: not eligible, eligible and receiving, and eligible but not receiving.<sup>11</sup> Theoretical payment amounts were calculated for eligible non-recipients while actual payment amounts were used for recipients.

The **take-up rate** is GIS recipients in 2000 as a percentage of those eligible for GIS in 2000.

The **application rate** is GIS recipients in 2000 who did not receive GIS in 1999 as a percentage of GIS recipients in 2000 who did not receive GIS in 1999 and eligible non-recipients.

The GIS recipients in 2000 who did not receive GIS in 1999 were assumed to represent those who applied for GIS in 2000. (They were not automatically renewed since they were not paid in 1999.) The eligible individuals in 2000 who were not receiving GIS in 1999 represented all those who could have applied for GIS in 2000.

Two logistic regressions were run to examine the characteristics associated with whether an eligible individual applied or not.<sup>12</sup> The first regression included all eligible individuals who had to apply, while the second included all eligible individuals who had to apply except those who were 65 in 2000. This was done since those turning 65 in 2000 had the opportunity to apply for GIS at the same time as they had applied for OAS. As such, they may have done so in response to being contacted for OAS.<sup>13</sup>

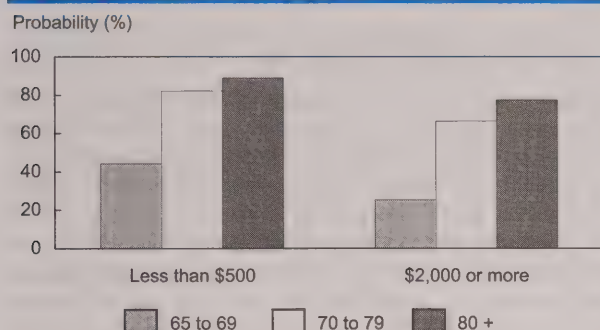
majority of eligible 65 year-olds ended up receiving GIS, it appears that the problem of take-up arises later when individuals are required to re-apply.

The logistic regression results were similar to the previous model (Table 6). Again the two older age groups were significantly different from the 66-to-69 group, and the 70-to-79 group remained not significantly different from the 80-and-over group. Given that removing the 65 years-olds had the greatest impact on the recipient group, it is no surprise that the likelihood of not applying increased substantially for this age group and had virtually no effect on the 80-and-over group.

The effect of removing the 65 year-olds was that those in the younger age group also ended up more unlikely to have applied—a 73% probability of not applying at the lowest payment level compared with 44% when the 65 year-olds were included (Table 7). Even at the highest payment level, a slight majority were likely not to apply. This result is unexpected since those 66 to 69 would have communicated with SDC during the previous five years and should have had the most up-to-date knowledge of the program.



**Chart B The likelihood of not applying when eligible increased with age, but decreased with GIS payment.**



Source: Survey of Labour and Income Dynamics, 1999-2001

## Summary

Established in 1967 by the federal government to assist seniors with little or no income other than Old Age Security, the Guaranteed Income Supplement has played an integral part in reducing low income among seniors. Today, of the 4.2 million seniors who receive OAS, roughly 1.6 million also receive GIS.

Senior families generally have lower after-tax income than non-senior families, but when wealth or net worth is examined, they appear to be better off than non-senior families (Williams 2003). Nonetheless,

**Table 7 Probability of not applying when eligible**

Age	Including age 65 in 2000	Excluding age 65 in 2000
<b>Annual GIS less than \$500</b>		%
65 to 69	44.3	73.3
70 to 79	82.2	83.1
80 and over	88.9	89.5
<b>Annual GIS \$2,000 or more</b>		
65 to 69	25.4	51.2
70 to 79	66.4	65.2
80 and over	77.4	76.5

Source: Survey of Labour and Income Dynamics, 1999-2001

among families with seniors, GIS families appear to be the least well off. They had lower median incomes, lower median assets, and lower net worth. They also had lower financial wealth and were, relatively speaking, more vulnerable than their non-GIS recipient counterparts. Furthermore, they were less able to handle a major unexpected expense.

The majority of GIS families had spending levels either equal to or above their incomes. This in itself is not necessarily troubling; according to the life-cycle hypothesis, dissaving is a natural part of the accumulation and dispersal of wealth over a lifetime. However, significantly more GIS families than non-GIS families were dissaving.

In order to receive GIS, individuals are required to apply and renew annually. This is done either automatically through the tax system or through a paper application process with SDC. Existing clients are for the most part renewed automatically, but clients applying either for the first time or after losing eligibility are required to do so directly with SDC. For a number of reasons (not understanding eligibility requirements, language barriers, unaware they must apply, diminished cognitive abilities), many of these individuals end up not applying.

In 2000, only 41% of those who needed to apply actually did so. Excluding 65 year-olds, this percentage decreased to 25%. Two factors were associated with whether an individual applied: age and payment amount. Age was negatively related and payment amount positively related, although the negative age effect superseded the payment effect. The most troubling finding was that the probability of a relatively young senior (66 to 69) eligible to receive a benefit of \$2,000 or more actually applying was roughly only 50%; for those in the oldest age group it was only 24%.

In response to the Standing Committee on Human Resources Development and the Status of Persons with Disabilities, SDC addressed the issue of eligible non-recipients. Their plan included contacting potential GIS recipients using tax information. The effect on the take-up and application rates will become apparent in the coming years.

## Perspectives



## ■ Notes

1 Low-income rates are based on 1992 after-tax, low-income cutoffs.

2 This system of automatic renewal has been in place since 1999 with most GIS recipients being renewed in this way (HRDC 2002).

3 The goal was not to compare the wealth of seniors and non-seniors; the differences between the two have already been well documented. According to Williams (2003), seniors had slightly more non-financial assets, lower levels of debt, and significantly more wealth than non-seniors.

4 According to the 2001 Census, 287,000 seniors lived in collective dwellings (roughly 7% of all seniors).

5 Seniors living in nursing homes and long-term care facilities are excluded. This was not expected to cause a large bias in the estimated number of eligible non-recipients (although it will have an effect on the take-up and application rates) since program staff in these residences are usually well informed about the programs available to seniors (refer to HRDC 2002 for more information on outreach programs). Also, the informal networks within these residences serve to efficiently spread information. Other exclusions such as homeless shelters, rooming houses, and other temporary accommodation will affect the results; however, the number of seniors in such dwellings was relatively small (roughly 7,000 to 8,000 according to the 2001 Census).

6 The economic family concept was used—that is, persons living in the same dwelling and related by blood, marriage, common law, or adoption.

7 Although the sample size for SLID was substantially smaller than for LAD, it was used because of the availability of significantly more explanatory variables. Overall, SLID results were confirmed with LAD.

8 The Standing Committee's Report pointed out that some individuals who are eligible for OAS are not receiving it. Since receiving GIS depends on receiving OAS, the estimate here does not consider these eligible non-OAS recipients. Based on the 2001 Census, roughly 47,000 non-immigrant seniors over the age of 66 were not receiving OAS.

9 For married or common-law couples, the combined income of the pensioner and the spouse or partner was taken into account. In some cases, income information was not available for 1999 (less than 4%). In these cases, 2000 or 2001 data were used.

10 The cut-offs published by SDC are for those receiving the maximum OAS; for those not receiving the maximum, the cut-offs depend on the amount of the individual's OAS benefits. In general terms, the GIS for those receiving partial

OAS benefits will be higher by an amount equivalent to the difference between the maximum OAS and their OAS. This was not accounted for in this analysis. However, partial OAS recipients make up only a small portion—less than 4% of domestic recipients in 2000.

11 A number of assumptions were made to account for the difference in payment year (July to June) versus calendar year: An eligible non-recipient remained a non-recipient for the entire payment year; an individual receiving GIS in 2000 but not eligible based on 1999 income was classified as being not eligible and not receiving if they reported having GIS in 1999; an individual receiving GIS in 2000 but not eligible based on their 1999 income and reporting no GIS in 1999 was classified as being an eligible recipient who received an option (under certain circumstances such as a retirement, an individual can request to have an income estimate used rather than their actual income). These assumptions were not expected to have a significant effect on the results.

12 Logistic regression estimates the probability of a particular outcome (here, not applying when eligible) as a function of several explanatory variables. The association between each explanatory variable and the outcome is examined while holding all other variables constant. To account for the complex survey design, bootstrap weights and SUDAAN version 8.0 were used.

13 Since 1996, SDC has automatically sent out OAS application kits to individuals in advance of their 65th birthday. The kit provides information to clients about GIS and they are asked if they wish to apply for it.

14 See Chawla and Wannell (2005) for a more detailed discussion of spending and saving.

15 In SLID, imputations for GIS are done for seniors with no available tax information (approximately 21% in 2000). As such, a 100% GIS take-up rate is assumed, meaning an overestimation of the number of GIS recipients and an underestimation of the number of individuals eligible but not receiving. Of the 1.3 million individuals classified as having received GIS in SLID, 25% were imputed.

16 Estimates produced using LAD may be considered more precise since they are generated using a larger sample size; however, since LAD is based only on tax information, the number of social demographic variables available for analysis is limited, and the population covered includes only those who filed tax returns.

17 Interactions were included but none were found to be significant.

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

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# Youth and the labour market

Jeannine Usalcas

For most of the 1990s, employment opportunities for young people (age 15 to 24) were scarce. The recession at the beginning of the decade had a lasting effect on the youth labour market. In 1989, youth employment and participation rates were at record highs, but following years of layoffs and weak hiring, labour-market conditions for youth hit a 21-year low in 1997.

Since then, however, young people have come back to the workforce as a result of the strengthened economy. Although the rate has slowed recently, youth employment during the 1997-to-2004 period grew at a faster pace than employment for men and women 25 and over.

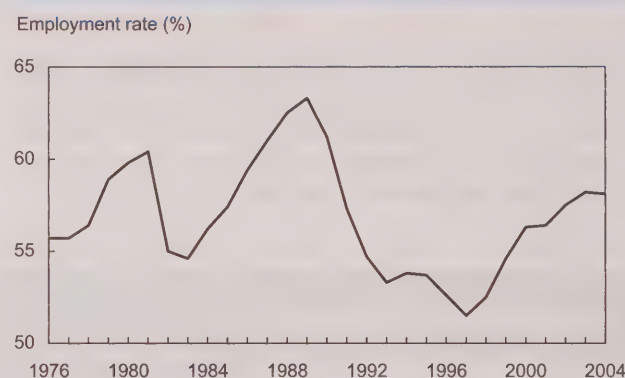
This growth spurt was stronger for women than for men, resulting in a higher proportion of young women working. This is unprecedented, since young men generally have higher employment rates than women during periods of employment growth. The trend was particularly evident for those aged 15 to 19. This article uses the Labour Force Survey to examine which industries and occupations fuelled the growth between 1997 and 2004 (see *Data source and definitions*).

## Youth employment growth healthy

After a period of decline from the 1980s to mid-1990s, the population of 15 to 24 year-olds is again increasing, reaching 4.4 million in 2004, up from 4.0 million in 1997. Youth employment has also grown but at a much stronger pace—up 428,000 or 21.1% from 1997 to 2004, well above the 7.8% increase in the youth population. In comparison, employment growth among those aged 25 and over was 15.8% during this period.

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**Chart A Youth employment has rebounded since its 1997 low.**



Source: Labour Force Survey

By 2004, more than 58% of youth had a job, up almost 7 percentage points from 1997 (Chart A). Although this is a large increase, the youth employment rate has not yet matched the 63.3% peak reached in 1989. But with more youth participating in the labour market, their participation rate revived from the record low of 61.5% in 1997 to 67.0% in 2004. And their unemployment rate declined 2.9 percentage points to 13.4%.

## Growth highest for young women, teenagers

The new jobs were not equally distributed (Table 1). Young women captured 240,000 of the 428,000 jobs created during the 1997-to-2004 period (up 24.7%), compared with 188,000 for young men (up 17.7%). Also, employment growth rates were stronger for teenagers (26.1% or 192,000) than for older youth (18.2% or 236,000).



**Table 1 Employment by sex and age**

	2004			1997 to 2004		
	Both sexes	Men	Women	Both sexes	Men	Women
	'000			% change		
<b>15 and over</b>	<b>15,950</b>	<b>8,480</b>	<b>7,470</b>	<b>16.6</b>	<b>13.7</b>	<b>20.1</b>
15 to 24	2,460	1,250	1,210	21.1	17.7	24.7
15 to 19	927	460	467	26.1	21.5	31.0
20 to 24	1,533	790	743	18.2	15.6	21.1
25 and over	13,490	7,230	6,260	15.8	13.0	19.3

Source: Labour Force Survey, 1997 and 2004

Female youth did better than their male counterparts. Employment levels for teenage girls (15 to 19) increased 31.0% (110,000) from 1997 to 2004, compared with an increase of 21.5% (81,000) for teenage boys. Young women aged 20 to 24 saw an increase of 21.1% (130,000) compared with 15.6% (107,000) for men the same age.

The larger employment growth among young women has affected rates of employment from an age-sex perspective (Table 2). For older youth, the gap between the sexes has narrowed. In 2004, 71.7% of men aged 20 to 24 were employed compared with 70.0% of their female counterparts, a 1.7 percentage point gap. In 1997, the gap was 5.0 percentage points (68.5% of young men were employed compared with 63.5% of young women).

For teenage girls, however, employment gains pushed their employment rate above that of their male counterparts (Chart B). Teenage boys and girls have shown very similar employment rates since the 1980s but now a gap has emerged. In 2004, the employment rate for girls was 46.1%, well above the 43.3% for boys.

## Retail trade and food services the driving forces

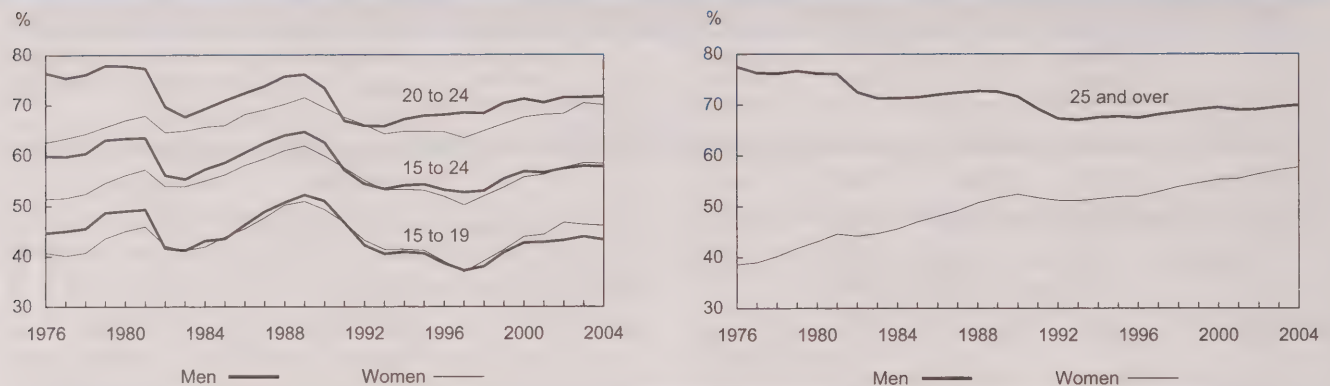
The retail trade sector, the largest employer of teenagers, has been the driving force behind new jobs for those aged 15 to 19 (Table 3). From 1997 to 2004, employment among teens grew by 192,000, with half of this growth (97,000) in retail trade. A much higher number of these new retail jobs went to girls (60,000) than to boys (37,000).

In 2004, 35% of female teens worked in retail trade, an increase of 6 percentage points from 1997. The largest increases were in stores selling food and beverages, clothing and clothing accessories, and health and personal care products, where they picked up jobs as cashiers or salespeople. For male teenagers, 30% of those with jobs were working in the retail industry in

**Table 2 Employment, unemployment and participation rates**

	2004			1997 to 2004		
	Both sexes	Men	Women	Both sexes	Men	Women
	%			% point change		
<b>Employment rate</b>						
15 and over	62.7	67.8	57.8	3.9	2.4	5.3
15 to 24	58.1	57.8	58.4	6.6	5.1	8.2
15 to 19	44.7	43.3	46.1	7.6	6.1	9.2
20 to 24	70.9	71.7	70.0	4.9	3.2	6.5
25 and over	63.6	69.9	57.7	3.3	1.8	4.8
<b>Unemployment rate</b>						
15 and over	7.2	7.5	6.8	-2.0	-1.8	-2.2
15 to 24	13.4	14.9	11.8	-2.9	-2.3	-3.4
15 to 19	18.1	19.4	16.7	-3.2	-3.0	-3.5
20 to 24	10.3	12.0	8.3	-2.8	-1.9	-3.8
25 and over	6.0	6.1	5.8	-1.8	-1.8	-1.9
<b>Participation rate</b>						
15 and over	67.6	73.3	62.1	2.8	1.2	4.4
15 to 24	67.0	67.9	66.1	5.5	4.3	6.9
15 to 19	54.5	53.7	55.4	7.4	5.7	9.2
20 to 24	79.0	81.5	76.4	3.0	1.9	4.2
25 and over	67.7	74.4	61.3	2.3	0.4	4.0

Source: Labour Force Survey, 1997 and 2004

**Chart B Among teenagers, the employment rate for girls is now above that for boys.**

Source: Labour Force Survey

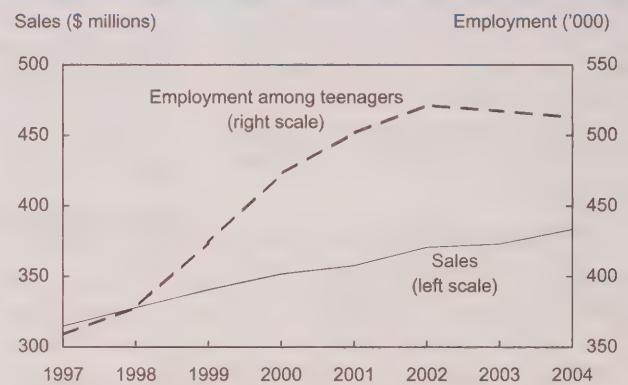
2004, only a 3-point increase from 1997. Growth was mainly in food and beverage stores and general merchandise where they worked as grocery clerks, shelf stockers, or salespeople.

The next largest employer as well as employment growth sector for teens was accommodation and food services, where 61,000 new jobs for teenagers were added from 1997 to 2004. As in retail trade, more jobs went to female teens (38,000) than to male teens (22,000) during this period. In 2004, 29% of all teenage girls were working in the accommodation and food services sector compared with 21% of boys. The majority of these young people worked in food and drinking establishments, where all the growth took place. These teens worked mainly as food and beverage servers and cooks.

Most teenagers (82%) were students in 2004, attending school either full or part time. Given the need to accommodate their school schedules, it is not surprising that from 1997 to 2004, most of the new job growth (67%) during the school year was part-time. Jobs as cashiers, salespersons, and food and beverage servers are often part-time and require relatively little experience, while work hours are often evenings, weekends, and holidays. Generally, turnover is high in these occupations, since many leave for other, better-paying opportunities, opening up positions on a regular basis. All of these characteristics lend themselves well to the needs of student teenagers.

### Why such growth in retail and food services?

Consumer spending has played a major role in recent economic growth. As a result, both the wholesale and retail sectors have been among the fastest growing. Retailers sold about \$346.7 billion worth of goods and

**Chart C Sales growth in retail and food services has meant more jobs for teens.**

Sources: Labour Force Survey; Retail Trade Survey; Monthly Restaurants, Caterers and Taverns Survey  
 Note: Retail sales, and restaurant, caterer and tavern receipts have been adjusted for inflation. Employment is for retail and food services.

**Table 3 Largest employment changes by industry**

	2004	Change since 1997	
	'000	'000	%
<b>Age 15 to 19</b>			
<b>Men</b>			
All industries	460	81.3	21.5
Retail trade	137	37.0	36.9
Accommodation and food services	96	22.1	30.1
Information, culture and recreation	37	11.5	45.3
Construction	30	9.6	46.2
Business, building, other support services	23	5.7	33.9
Manufacturing	42	3.9	10.3
Agriculture	20	-6.9	-25.4
<b>Women</b>			
All industries	467	110.3	31.0
Retail trade	162	59.5	58.3
Accommodation and food services	137	38.4	38.8
Information, culture and recreation	37	14.0	60.3
Other services	31	9.9	46.9
<b>Age 20 to 24</b>			
<b>Men</b>			
All industries	790	106.8	15.6
Construction	95	44.0	86.3
Manufacturing	134	18.4	15.9
Business, building, other support services	47	16.1	51.8
Retail trade	145	10.5	7.8
Information, culture and recreation	39	7.7	24.5
Finance, insurance, real estate, leasing	34	7.7	29.6
Forestry, fishing, mining, oil and gas	20	-3.2	-13.7
<b>Women</b>			
All industries	743	129.5	21.1
Health care and social assistance	100	33.8	51.1
Retail	179	31.2	21.1
Accommodation and food services	122	16.3	15.4
Information, culture and recreation	46	12.4	36.6
Educational services	40	10.9	38.0
Professional, scientific, technical services	35	7.9	28.9
Finance, insurance, real estate, leasing	46	5.5	13.6
Business, building, other support services	31	3.7	13.7

Source: Labour Force Survey, 1997 and 2004

services in 2004, a 21% increase from 1997 (adjusted for inflation). Sales growth was strong among many of the retail industries that tend to hire youth. These include

sales of food and beverages, department and general merchandise stores, clothing and clothing accessories, and health and personal care products. The number

of restaurants, taverns and caterers also increased, with sales in the food services sector up 27%, to \$36.6 billion in 2004 (Chart C).

### Why more jobs for teenage girls?

Historically, more women than men tend to take jobs as cashiers, salespersons, or food and beverage servers in retail trade and accommodation and food services. And these were the occupations and industries with above-average rates of employment growth during the 1997-to-2004 period.

Employment growth for teenagers was less in some of the more male-dominated industries, such as manufacturing, natural resources, agriculture, and transportation and warehousing during this period. Although teenage boys were able to find jobs in construction, their shares in the other male-dominated sectors declined. In 2004, only 16% of male teens were employed in manufacturing, natural resources, agriculture, and transportation and warehousing, compared with 21% in 1997.

### Growth more diversified among young adults

As stated earlier, employment among 20 to 24 year-olds increased by 18% from 1997 to 2004, adding 236,000 jobs. The trend toward stronger employment growth for women again applied, as women this age picked up 130,000 new jobs compared with 107,000 for the men.

Employment growth among those 20 to 24 was mainly full-time (77%) and was spread across several industries. For women, it



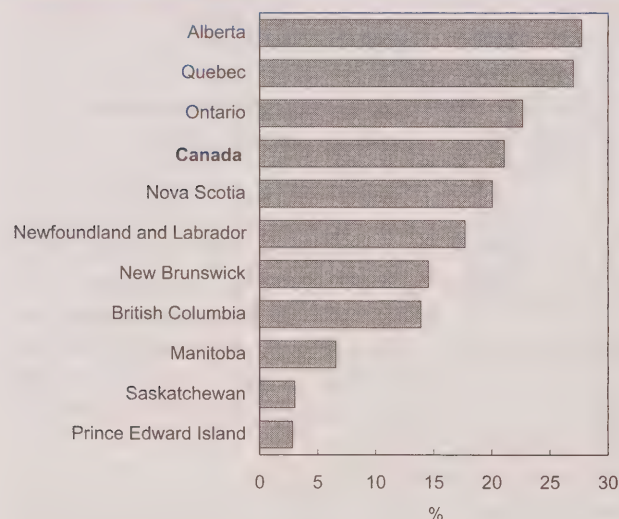
occurred mainly in health care and social assistance; information, culture and recreation; and educational services. For men, the growth sectors were construction; business, building and other support services; and finance, insurance, real estate and leasing.

A high proportion of both teens and older youth are employed in retail trade, and accommodation and food services. But while the teen share of total employment in these two industries increased from 1997 to 2004 (from 51% to 57%), the share for older youth declined (from 36% to 34%). Although older youth did gain new jobs in these industries, the gains did not keep pace with overall employment growth.

### Provincial growth

Alberta, Quebec and Ontario, which performed above the national average in terms of overall employment growth during the 1997-to-2004 period, also had above average growth rates in youth employment (Chart D). Each of the three provinces saw substantial youth employment growth in retail trade, accommodation and food services, and construction.

**Chart D Youth employment growth has been highest in Alberta, Quebec and Ontario.**



Source: Labour Force Survey, 1997 and 2004

### Data source and definitions

The **Labour Force Survey (LFS)** is a monthly household survey that collects information on labour market activity from the civilian, non-institutionalized population 15 years of age and over. Residents of the territories and persons living on Indian Reserves are excluded. The survey uses a rotating sample of approximately 54,000 households, with each household remaining in the sample for six consecutive months.

The LFS divides the working-age population into three mutually exclusive classifications: employed, unemployed, and not in the labour force. For a full listing and description of LFS variables, see *Guide to the Labour Force Survey* (Statistics Canada catalogue no. 71-543-GIE).

**Employment rate:** Number of employed persons expressed as a percentage of the population 15 years of age and over. The employment rate for a particular group (for example, youth aged 15 to 24) is the number employed in that group expressed as a percentage of the population for that group.

**Unemployment rate:** Number of unemployed persons expressed as a percentage of the labour force. The unemployment rate for a particular group is the number unemployed in that group expressed as a percentage of the labour force for that group.

**Participation rate:** Total labour force (employed plus unemployed) expressed as a percentage of the population 15 and over. The participation rate for a particular group is the labour force in that group expressed as a percentage of the population for that group.

In 2004, the proportion of youth with jobs was highest in Alberta (66%), Manitoba (63%), and Saskatchewan (61%), while Newfoundland and Labrador (43%) and British Columbia (55%) recorded the lowest proportions. Interestingly, the Prairie provinces not only had the highest youth employment rates but also were the only ones with a higher proportion of young men working. Alberta, Saskatchewan and Manitoba had the largest shares of young men working in goods-producing and transportation and warehousing, industries that generally employ more men than women.

### Conclusion

Youths have made significant strides in the labour market during this recent period of economic growth. From 1997 to 2004, their employment grew at a faster pace than that of men and women aged 25 and over.

## Earnings trends among youth

Older youth benefited more than teens in terms of earnings growth from 1997 to 2004. Hourly earnings rose 4.6% for those 20 to 24 years, to an average of \$11.89 in 2004, from \$11.37 in 1997 (adjusted for inflation). Teens, however, did not even keep up with inflation. In 2004, they earned an average of \$8.14 an hour, slightly less than their \$8.33 in 1997.

Weekly earnings, however, increased for both teens and older youth. For older youth, they increased by 5.1% from 1997 to 2004, compared with 3.4% for adults and 1.3% for teens. In 2004, weekly earnings for young adults were \$399.00 versus \$379.58 in 1997.

Teens had a slight increase in weekly earnings because they worked more hours. In 2004, they averaged 21.2 hours, up from 20.5 in 1997. Both sexes worked more hours, but teen girls increased their average slightly more. Teenage girls worked an extra 1.2 hours in 2004 at 19.2 hours, while boys worked 0.4 hours more, at 23.2 hours. Teens made an average of \$183.76 per week in 2004, only slightly higher than the \$181.46 in 1997.

The greater earnings increase for older youth is not surprising, considering that much of the gains in employment for older youth were in higher-paying industries or occupations and mostly in full-time jobs. Teens took more jobs in retail trade and accommodation and food services, where many jobs are part-time and pay less.

## Average hourly and weekly wages and weekly hours worked

	Both sexes		Men		Women	
	2004	Change from 1997	2004	Change from 1997	2004	Change from 1997
	\$	%	\$	%	\$	%
<b>Hourly wage</b>						
15 to 24	10.49	1.7	11.01	2.1	9.96	1.4
15 to 19	8.14	-2.2	8.51	-0.6	7.78	-3.6
20 to 24	11.89	4.6	12.48	4.3	11.28	5.1
25 and over	20.19	3.5	22.07	2.5	18.25	5.6
<b>Weekly wage</b>						
15 to 24	318.53	2.4	359.78	1.7	276.46	4.8
15 to 19	183.76	1.3	210.54	1.5	157.18	2.8
20 to 24	399.00	5.1	447.01	3.5	349.24	8.3
25 and over	756.22	3.4	877.13	1.9	630.58	7.0
<b>Weekly hours worked</b>						
15 to 24	28.1	-1.1	30.6	-2.2	25.5	1.2
15 to 19	21.2	3.4	23.2	1.8	19.2	6.7
20 to 24	32.4	-1.5	34.9	-3.1	29.5	0.0
25 and over	37.7	-2.6	41.0	-3.3	33.6	-0.9

Source: Labour Force Survey

Note: The 1997 wages used in the text and table have been adjusted for inflation.

Furthermore, young women, particularly teenagers, experienced larger increases in their employment rates than young men—breaking a longstanding trend. During periods of economic growth, young men have historically had higher rates of employment than young women.

The distribution of employment growth among industries also differs during this period. Spurred by consumer spending, major growth took place in

industries more likely to hire young people, such as retail trade, and accommodation and food services. On the other hand, some of the industries more likely historically to hire young men were not as strong during this period. Although teenage boys were able to find jobs in construction, their shares in the manufacturing, natural resources, agriculture, and transportation and warehousing sectors declined.

## Perspectives



# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Family earnings instability*

Family earnings instability changed little between the late 1980s and the late 1990s. Between 1986 and 1991, families with a husband aged 25 to 50 saw their earnings fluctuate on average about 14% from the mean. Ten years later, their counterparts faced roughly the same level of fluctuations.

At least two factors may have tended to offset the upward pressures on family earnings instability. The proportion of two-parent families with two earners rose between the late 1980s and the late 1990s. This meant that for a growing fraction of these families, the risk of job loss was now spread across two earners, rather than being concentrated on a single earner.

Families in the lowest one-third of the earnings distribution experienced much wider percentage earnings fluctuations over six-year periods than those at the top of the distribution.

However, government transfers, such as Employment Insurance and Social Assistance, and, to a lesser extent, the progressivity of the tax system eliminated much of these differences.

For more information, see the November 2, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Savers, investors and investment income*

The number of taxfilers reporting investment income and the amount of investment income they reported both rebounded last year.

More than 7.5 million people reported just under \$31.3 billion of income from investments in 2004. The number reporting investment income rose 2.0%, while the income itself was up 1.8%. These increases followed three consecutive years of declines in the number of persons reporting such income, and two years of declines in the amounts.

The proportion of taxfilers reporting investment income remained relatively stable at 33% last year, after continual declines since 2000.

The median investment income reported in 2004 was \$460. In other words, one-half of those reporting investment income reported more than \$460 and half reported less.

Last year, 3.1 million investors reported \$24.3 billion of dividend and interest income. The number of investors rose 6.3%, while the income they reported went up 4.6%.

On the other hand, the number of savers declined 0.9% to 4.4 million in 2004. This was a much smaller percentage decline than in the previous two years.

The amount of interest income reported in 2004 fell 7.1% to \$6.9 billion, about the same decline as in 2003. However, this decline was not nearly as steep as in 2002, when interest income fell by 25.5%.

For more information, see the October 31, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *The socio-economic progress of the children of immigrants*

The earnings of second-generation Canadians are only loosely tied to the socio-economic status of their parents. This implies that the children of immigrants with below average earnings can be expected to make significant gains in earnings in adulthood.

On average, only about one-fifth to one-quarter of any earnings advantage or disadvantage an immigrant father may have is passed on to his son. This is no different than among the Canadian population at large, and it is lower by half than in the United States. Further, there is no correlation at all between paternal earnings and the adult earnings of daughters.

Second-generation children in Canada are more educated and earn more on average than Canadians of a similar age whose parents were both born in Canada.



Canadian-born men aged 25 to 37 whose parents were born outside Canada had more years of schooling and a greater likelihood of holding a university degree than Canadians of the same age whose parents were born here.

Except for those whose fathers were from the Caribbean, Central or South America, or Oceania, they also had higher weekly earnings. The earnings advantage was about 6%, except for those from the traditional source countries, where it was more than twice as great at 14%.

A similar picture emerged for daughters, although in this case there was an education and earnings advantage regardless of the origins of the parents.

Even though paternal earnings were not strongly associated with the adult earnings of daughters, the father's education was an important influence. Fathers from immigrant communities with high levels of education are able to promote the education and labour market success of their daughters.

Second-generation Canadians with either one or both parents born elsewhere were less likely to lack high school credentials and more likely to have a university degree than Canadian-born individuals with Canadian-born parents.

The labour market engagement of second-generation Canadians was no different than for those with both parents born in Canada. For women there was, in fact, a higher likelihood of working in paid employment. Average annual earnings tended to be higher among immigrant and second-generation men, and noticeably more so for women.

At the same time, reliance on Employment Insurance and other employment-related government transfer payments was lower for second-generation men and women. About 15% of second-generation Canadians received some Employment Insurance payments in 2000, compared with just over 20% of those with Canadian-born parents.

For more information, see the October 25, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Longitudinal Survey of Immigrants*

Two years after their arrival in Canada, prime working-age immigrants had made significant progress integrating into the labour force, but they still faced some challenges.

Of the immigrants who found employment, many worked throughout their first two years in Canada. Over half (58%) worked for 18 months or more and three-quarters worked for more than one year.

One in five had no employment during this period. The majority of these individuals were women (74%), many of whom were spouses or dependants of immigrants in the economic category, or immigrants in the family category.

After two years, most newcomers had not found employment in the occupations in which they intended to work. Of those who found employment, 33% found a job in their intended occupation during their first year in Canada, and another 9% did so during their second year.

In addition, newcomers still faced hurdles. At six months, the most serious problem in finding employment for prime working-age immigrants was their lack of experience in the Canadian workforce. This was still the case after two years.

Many reported that their most serious difficulty was getting acceptance or recognition for their foreign professional credentials or educational qualifications, such as diplomas or degrees obtained in their homeland. However, despite these challenges, most of the newcomers reported that they were satisfied with their job.

For more information, see the October 13, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Labour productivity*

On average, labour productivity in the Canadian business sector has been virtually unchanged for the past two years. Zero growth in 2004 was the least since 1996, while the increase in 2003 was only 0.2%.

In contrast, before pausing in the second quarter, productivity in the American business sector grew at an average quarterly rate of 0.7% during the previous five quarters.

GDP growth in the Canadian business sector accelerated to 0.8% during the second quarter, twice the pace observed in the first three months of the year (+0.4%).

Continued robust consumer spending and the recovery in the housing sector were largely responsible for this improvement. A slowdown in imports in the second quarter, following four quarters of robust growth, also contributed to improved economic output.

For the American business sector, GDP growth slowed slightly, from 1.1% in the first quarter to 0.9% in the second. Over the last six quarters, GDP growth in the United States has remained fairly stable, fluctuating between 0.9% and 1.2%.

GDP growth has been more rapid in the United States than in Canada for a fourth quarter in a row. Over this period, the economic activity strength south of the border has resulted essentially from consumer expenditures and business investments.

In the first two quarters of 2005, the number of hours worked increased at the same pace in both countries. The growth of hours worked doubled in the second quarter, reaching 0.8% in each economy.

For more information, see the September 9, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ **Chronic unemployment**

Two small groups of unemployed individuals were responsible for a disproportionate share of unemployed weeks in Canada between 1993 and 2001. In fact, just 15% of unemployed people accounted for 41% of all unemployment.

One of the groups comprised individuals who were unemployed during their entire time in the labour force (the always unemployed). The second consisted of the chronically unemployed—people who spent between 48% and 99% of their labour force time in unemployment.

Women were more affected by chronic unemployment than men. They made up 55% of the chronically unemployed population, the problem being especially acute for single mothers.

Also, people without a high-school diploma were over-represented among the chronically unemployed, as were residents of Quebec and the Atlantic provinces, older workers, members of visible minority groups, and people with disabilities.

Chronically unemployed individuals tended to experience more and longer spells of unemployment than other unemployed people. Moreover, their attachment to the labour market was not as strong.

Over a six-year period between 1993 and 2001, the chronically unemployed experienced, on average, 3.4 periods of unemployment, each lasting an average of about 54 weeks. More than one-quarter experienced 5 or more spells. Indeed, almost 1 out of every 10 in this group experienced 7 or more spells, and some experienced as many as 16.

People who were always unemployed during their time in the labour force experienced an average of 1.7 periods of unemployment over six years, each lasting about 77 weeks. Having more than one spell of unemployment indicated that they had quit looking for work and had withdrawn from the labour force at some point.

For more information, see the September 6, 2005 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **FROM OTHER ORGANIZATIONS**

### ■ ***Trends reshaping Canada's future***

In this 10th edition of its annual report on Canada, the Conference Board of Canada takes a retrospective and prospective look at the critical factors affecting the quality of life of Canadians. Looking back, the Board examines changes in Canada's performance since the mid-1990s and looks at the evolution of our knowledge and understanding of the key issues. Looking forward, it examines the global trends that are reshaping Canada's future performance, prosperity and well-being. See *The World and Canada—Trends Reshaping Our Future*, Conference Board of Canada, 2005 Report.

### ■ ***Measures of material deprivation in OECD countries***

Poverty is a complex issue, and a variety of approaches are required to study it. While monetary measures of income poverty are widespread, a long-standing tradition relies on non-monetary measures, based on either self-assessment or on measures of ownership of consumer goods and living standards. Measures of material deprivation fall into this latter category. These measures rest on shared judgments about which items are more important for a 'decent' living standard, irrespective of people's preferences or their ability to



afford these items. Material deprivation is typically the outcome of income poverty that persists over time or is experienced repeatedly. Because of this, measures of material deprivation complement conventional income measures, permitting an assessment of poverty from a longer-run perspective and furthering understanding of the causal mechanisms.

Income measures do not provide a full picture of 'command over resources': they neglect the ability to borrow, to draw from accumulated savings and to benefit from help provided by family or friends, as well as consumption of public services such as education, health and housing. For these reasons, income indicators provide only a partial description of the individual's ability to enjoy an 'acceptable' living standard.

This paper discusses the use of material deprivation measures for an analysis of poverty in OECD countries. See *Measures of Material Deprivation in OECD Countries*; Employment, Labour and Social Affairs Committee of the Organisation for Economic Co-operation and Development, working party on social policy held November 17-18, 2005.

### ■ *Specialization and the skill premium in the 20th century*

The skill premium fell substantially in the first part of the 20th century and then rose at the end. This article argues that these changes are connected to the organization of production. When this means large plants, jobs become routinized, favouring less-skilled workers. A model is introduced that quantifies capital's flexibility. When correlated with plant size, the model can account for between half and two-thirds of the movement in the skill premium over the century. See "Specialization and the skill premium in the 20th century" by Matthew F. Mitchell, *International Economic Review* 46, no. 3: 935-955 (August 2005).

### ■ *Top incomes in the United States and Canada in the 20th century*

This paper looks at the shares of income held by those at the top of the ladder in the United States and Canada over the 20th century. In both countries, the shares display a U-shaped pattern over the century, with a precipitous drop during the Second World War and no recovery in the following decades. Since the late 1970s, however, the shares have been increasing dramatically and the very top shares are now almost

as high as in the pre-war era. The drop in the first part of the century was mainly a capital income phenomenon, but the recent increase is the consequence of a surge in top wages and salaries. The United States has significantly reduced marginal tax rates for high incomes over the last 40 years but Canada has not. Therefore, the almost-identical upward pattern of top income shares in both countries cannot be explained solely by changes in tax avoidance behaviour. Mobility at the top of the income distribution has been very stable in Canada despite the surge in annual income concentration. Thus the increase in annual top income shares in North America will likely translate into an increase in permanent income concentration of similar magnitude. See "Top incomes in the United States and Canada over the twentieth century" by Emmanuel Saez, *Journal of the European Economic Association* 3, no. 2-3: 402-411 (April-May 2005).

### ■ *Intertemporal substitution in macroeconomics*

The hypothesis of intertemporal substitution in labour supply has a history of empirical failure when confronted with aggregate time-series data. This article shows that a two-dimensional labour supply model, adapted to an environment with money as originally proposed by Lucas and Rapping (1969) and Lucas (1972) performs very well. The over-identifying restrictions implied by the model are far from rejected. The estimated parameters of preferences are generally stable and meaningful. Furthermore, the estimated wage elasticities of labour supply are much higher than previously found in the literature. See *Intertemporal Substitution in Macroeconomics: Evidence from a Two-dimensional Labour Supply Model with Money* by Ali Dib and Louis Phaneuf, Bank of Canada, [www.bankofcanada.ca](http://www.bankofcanada.ca) (October 2005).

### ■ *A search model of venture capital, entrepreneurship and unemployment*

This study develops a search model of venture capital in which successful matches of entrepreneurs and venture capitalists (VCs) at any point in time depend on the number of entrepreneurs searching for funds, VCs searching for entrepreneurs, and vacancies posted by each VC. The study incorporates search unemployment and explicitly models the occupational choice of individuals to become workers or entrepreneurs. The analysis shows that in the market



equilibrium, the level of advice VCs offer is inefficiently low compared with the social optimum. Furthermore, the number of vacancies, the level of employment, and the number of potential entrepreneurs are generally either too low or too high relative to their socially optimal level. Policy to achieve the optimum consists of a capital gains subsidy, an employment tax or subsidy, and an investment tax or subsidy. See *A Search Model of Venture Capital, Entrepreneurship, and Unemployment* by Robin Boadway, Oana Secieru and Marianne Vigneault, Bank of Canada, [www.bankofcanada.ca](http://www.bankofcanada.ca) (September 2005).

### ■ **Sunday shopping and employment in the retail industry**

Between 1980 and 1998, every Canadian province passed legislation that in some way relaxed restrictions on Sunday shopping. This study exploits the variation in provincial deregulation to identify how retail employers adjust employment and hours when deciding to open on Sundays. A major complication of this analysis is to first determine for which provinces deregulation dates are useful indicators of increases in Sunday store openings. This paper uses a unique trading-day regression approach to identify these provinces and then uses aggregate data to estimate a simple dynamic labour demand model that allows employment and hours to be imperfect substitutes in production. The results suggest that retailers' needs for Sunday labour were disproportionately satisfied through increases in employment levels. Comparison of the estimates at three levels of the retail industry suggests that the employment and hours gains were larger among general merchandise stores than among more specialized retail establishments and relatively modest at the aggregate retail industry level. In addition, despite evidence of an immediate shortfall in the employment level below the long-run optimal level, the results suggest that firms were unable to compensate by temporarily increasing the hours of their existing employees. See "The impact of Sunday shopping on employment and hours of work in the retail industry: Evidence from Canada" by Mikal Skuterud, *European Economic Review* 49, no. 8: 1953-1978 (November 2005).

### ■ **Welfare to what? After workfare in Toronto**

An employment survey among people in Toronto who left Ontario Works—a classic 'work-first' regime—shows clear secondary labour market status. Most interventions typical of work-first programs did not have a positive effect on job quality. Contrary to the 'stepping stones' theory that poor initial jobs lead to better jobs, those who changed jobs after leaving assistance experienced poorer job quality. A shift in orientation to 'sustainable employment' is required to address the employment needs of those on social assistance. Policy must also address the sizeable group that faces significant barriers to employment other than education or skills. "Welfare to what? After workfare in Toronto" by Ernie Lightman, Andrew Mitchell and Dean Herd, *International Social Security Review* 58, no. 4: 95-106 (October-December 2005).

### ■ **Work and mental health: The experience of the Quebec workforce**

This study examines the distribution of psychological distress in 12 occupational groups within the Quebec workforce between 1987 and 1998. Cross-sectional data from the three phases of the Quebec Health and Social Survey are used. Occupations are classified according to the Canadian Socio-economic Classification of Occupations. Prevalence estimates for occupational groups are computed and logistic regression analyses are conducted controlling for sex, age and marital status. The results show that the incidence of psychological distress increased sharply between 1987 and 1992 and declined somewhat in 1998. However, only non-qualified white collars, semi-qualified blue collars, and male non-qualified blue collars show a significant increment in psychological distress over time. Analysis of the differentials in the prevalence of psychological distress gives greater odds of distress for supervisors, and semi-qualified white and blue collar workers compared with upper managers. See "Work and Mental Health: The Experience of the Quebec Workforce between 1987 and 1998" by Alain Marchand, Pierre Durand and Andrée Demers, *Work* 25, no. 2: 135-142 (2005).

# Key labour and income facts

## *Selected charts and analysis*

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; [bourjoa@statcan.ca](mailto:bourjoa@statcan.ca).

### **Administrative data**

#### *Small area and administrative data*

Frequency: Annual  
Contact: Customer Services  
(613) 951-9720

### **Business surveys**

#### *Annual Survey of Manufactures*

Frequency: Annual  
Contact: Dissemination agent  
(613) 951-9497

#### *Annual Surveys—Service Industries*

Frequency: Annual  
Contact: Lucie Lussier  
(613) 951-0410

#### *Business Conditions Survey of Manufacturing Industries*

Frequency: Quarterly  
Contact: Claude Robillard  
(613) 951-3507

### **Census**

#### *Census labour force characteristics*

Frequency: Quinquennial  
Contact: Danielle Zietsma  
(613) 951-4243

#### *Census income statistics*

Frequency: Quinquennial  
Contact: John Gartley  
(613) 951-6906

### **Employment and income surveys**

#### *Labour Force Survey*

Frequency: Monthly  
Contact: Marc Lévesque  
(613) 951-4090

#### *Survey of Employment, Payrolls and Hours*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4003

#### *Employment Insurance Statistics Program*

Frequency: Monthly  
Contact: Sylvie Picard  
(613) 951-4003

#### *Major wage settlements*

Workplace Information Directorate  
(Human Resources and Skills Development Canada)  
Frequency: Quarterly  
Contact: (819) 997-3117  
1 800 567-6866

#### *Labour income*

Frequency: Quarterly  
Contact: Anna MacDonald  
(613) 951-3784

#### *Survey of Labour and Income Dynamics*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Financial Security*

Frequency: Occasional  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Survey of Household Spending*

Frequency: Annual  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

### **General social survey**

#### *Education, work and retirement*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Social and community support*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

#### *Time use*

Frequency: Occasional  
Contact: Client Services  
(613) 951-5979

### **Pension surveys**

#### *Pension Plans in Canada Survey*

Frequency: Annual  
Contact: Patricia Schembari  
(613) 951-9502

#### *Quarterly Survey of Trusteed Pension Funds*

Frequency: Quarterly  
Contact: Bob Anderson  
(613) 951-4034

### **Special surveys**

#### *Survey of Work Arrangements*

Frequency: Occasional  
Contact: Ernest B. Akyeampong  
(613) 951-4624

#### *Adult Education and Training Survey*

Frequency: Occasional  
Contact: Client Services  
(613) 951-7355 or  
1 888 297-7355

#### *Graduate Surveys*

(Postsecondary)  
Frequency: Occasional  
Contact: Client Services  
(613) 951-7608



# Education indicators

In today's world, education is more important than ever—for both individuals and nations. This human capital is instrumental to economic growth, productivity, and living standards. In an environment of increasing globalization and outsourcing, the demand for learning is growing and changing. Government and enterprises everywhere are engaged in improving the education and skills of people in cost-effective and equitable ways.

In Canada, education is a provincial or territorial responsibility. Each province or territory controls financing and administration, and sets its own teaching standards. The federal government has a limited role. It provides financing to special schools such as those for Aboriginal people or for the physically disabled or visually impaired. In addition, it contributes to universities by creating special chairs or by funding research and development activities. Student loans and tax-deferred plans to save for educa-

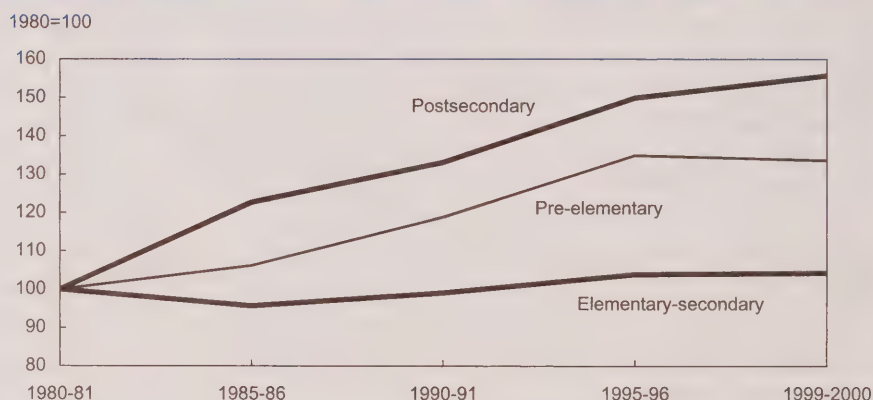
tion are also federal initiatives. Municipal governments deliver funds to elementary and secondary schools from property taxes or provincial transfers. Both enrolment and funding at all levels of education have been affected by changing socio-demographics: a declining birth rate, aging of the population, almost stagnant incomes, and increasing immigration.

These issues are examined in this first segment of indicators on education, which contains 24 charts highlighting developments over the last two decades. Future segments will focus on interprovincial differences in expenditure on education, qualitative indicators such as class size and pupil-teacher ratios, spread of information technology, major fields of postsecondary study, sources of income for postsecondary students, and salaries and employment conditions of teaching staff at different levels.

## Growth in full-time enrolment by level of education

The formal learning process may start as early as age 4 with pre-elementary education. Elementary-secondary education is compulsory to at least age 16; the age varies by province. Public education is free until the end of secondary school. (Up to 2002-03, secondary education in Ontario included grade 13; in Quebec elementary-secondary education requires 11 years, but university-bound students must complete a two-year program at a community college—CEGEP).

Of Canada's 24.5 million inhabitants in 1980, 5.7 million (23.3%) were enrolled full time at educa-

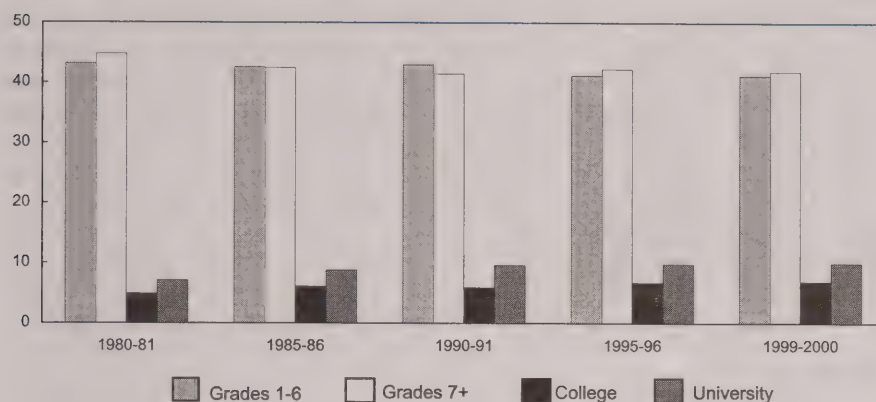


tional institutions. By 1999, the population increased to 30.4 million and full-time enrolment to 6.4 million (21.1%). Although the overall growth in full-time enrolment was only 12.1%, postsecondary institutions saw a 55.7% increase over the period.



## Full-time enrolment by level of education

% distribution



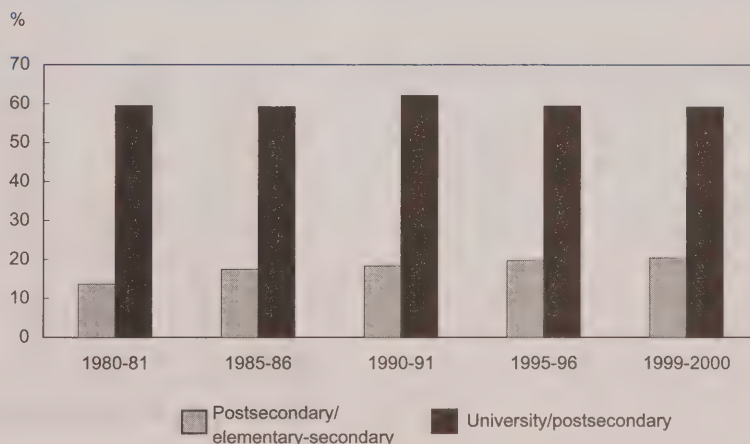
Note: Pre-elementary is not included.

Among students enrolled full time at public or private educational institutions (excluding pre-elementary), the proportion attending postsecondary institutions rose steadily, from 12.0% in 1980 to 16.9% in 1999. Universities accounted for 3 of the 5 percentage-point increase and colleges for 2 points. The proportion attending elementary or secondary schools declined between 1980 and 1999, largely because of the drop in the birth rate (1.46% to 1.05%) but also because of an increase in the secondary-school dropout rate.

## Full-time postsecondary enrolment

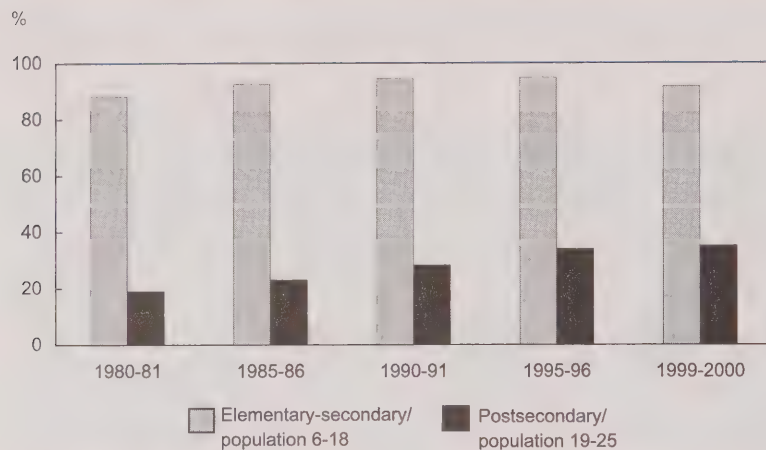
An increasing trend for full-time postsecondary enrolment can also be seen in the rising ratio of postsecondary to elementary-secondary school enrolment—from 14 per 100 in 1980 to 20 per 100 by 1999.

Postsecondary institutions include non-degree-granting community colleges providing trade or vocational programs, and degree-granting universities. Their shares of full-time enrolment did not change much between 1980 and 1999—universities accounted for 60% and colleges the rest.



Note: Pre-elementary is not included.

## Full-time enrolment rates for elementary-secondary and postsecondary populations



Note: Pre-elementary is not included.

populations. As expected, the participation rate for those 6 to 18 enrolled full time at elementary or secondary school fluctuated between 88.2% and 95.5%. The rate will be less than 100% because the upper age limit varies by province, and also because of the dropout rate, which varied over time and by province.

The steadily growing pursuit of postsecondary education is evident in the rising participation rate—in 1980-81, only 19.0% of persons 19 to 25 were enrolled full time at a postsecondary institution compared with 35.1% in the 1999-2000 academic year.

A 'participation rate' can be calculated for elementary-secondary (ages 6 to 18) and postsecondary (19 to 25) populations by expressing enrolments as a percentage of their respective

## Community college enrolment

The overall number of students attending community colleges hovered around half a million between 1986 and 1999, with just over half being women. Among both sexes, the proportion enrolled full time rose: from 69.3% to 84.4% for men and from 63.1% to 81.3% for women. Over time, therefore, the difference in the proportions narrowed from 6 to 8 percentage points in the late 1980s to around 3 points in the late 1990s.



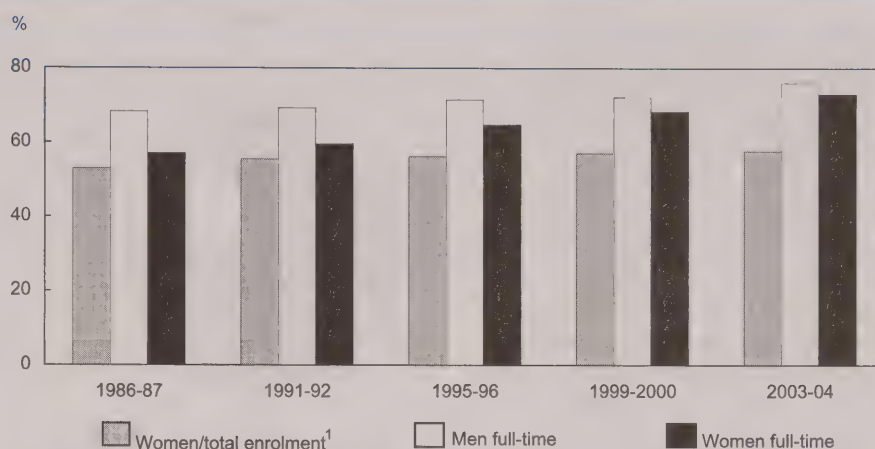
<sup>1</sup> Includes full and part-time enrolment.

A major reason behind increased full-time enrolment at community colleges is the growing demand for greater skills in a rapidly changing job market. Colleges can generally provide job-oriented skills in less time and at a lower cost than universities.

## University enrolment

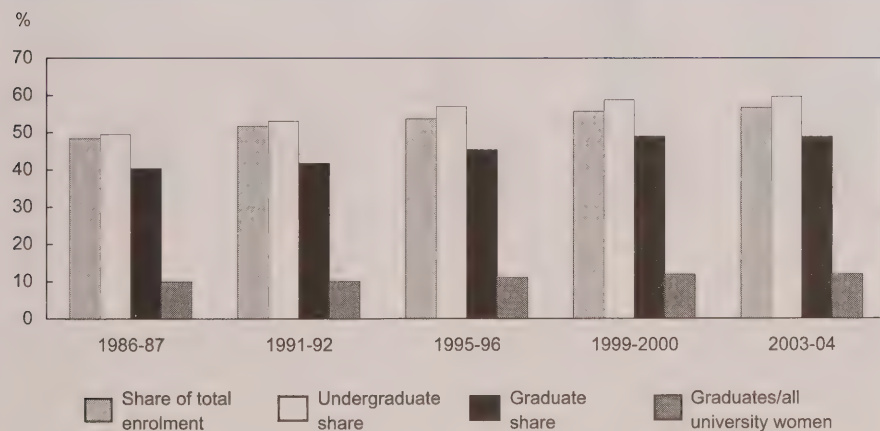
Enrolment at universities increased from 763,000 in 1986 to 990,000 by 2003, with women's representation also rising from 52.9% to 57.7%. Although the majority of both men and women attended university on a full-time basis, the rise in the proportion of women outpaced that of men: from 57.0% to 73.0% for women and from 68.3% to 76.1% for men. Similar trends were seen for community and technical colleges.

Among those enrolled at a university, 87.8% were in undergraduate programs in 1986 compared with 85.7% in 2003, indicating a slight increase in the proportion of those taking graduate programs.



<sup>1</sup> Includes full and part-time enrolment.

## Women's representation in full-time university enrolment



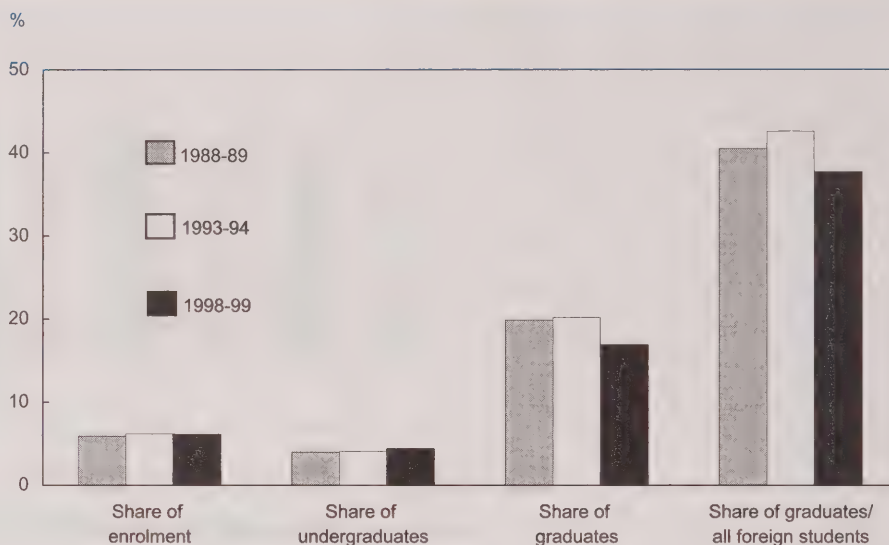
Between 1986 and 2003, women's representation among undergraduates increased from 49.5% to 59.7%, and among graduates from 40.3% to 48.8%. On the other hand, the proportion of men and women enrolled for a graduate degree did not vary much over the years, staying around 10% to 12% for women and 15% to 17% for men.



## Foreign student representation in full-time university enrolment

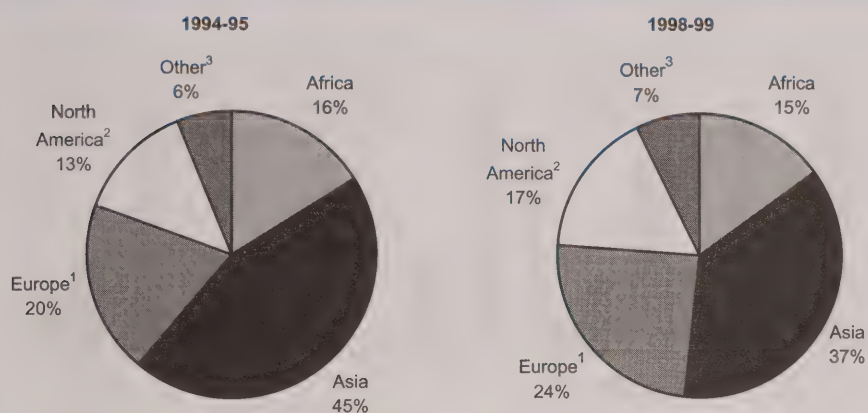
Many foreign students from developing countries come to Canada to pursue higher education. Some receive public funds from their own country or through Canadian assistance programs, while others rely on private or personal means.

Between 1988 and 1998, full-time foreign student enrolment at Canadian universities grew from 31,000 to 37,000 of a total respective enrolment of 532,000 and 580,000. The proportion of foreign students among those enrolled full time has remained around 6%. Their representation, however, varied considerably by level—around 4% among undergraduates but between 17% and 23% among graduates.



Four in 10 foreign students attended a graduate program. Between 1988 and 1998, the proportion of foreign students among graduates peaked at 23.3% in the 1990-91 academic year, after which it dropped steadily—largely because of steadily rising tuition fees for foreign students pursuing advanced degrees.

## Full-time foreign students by country of origin



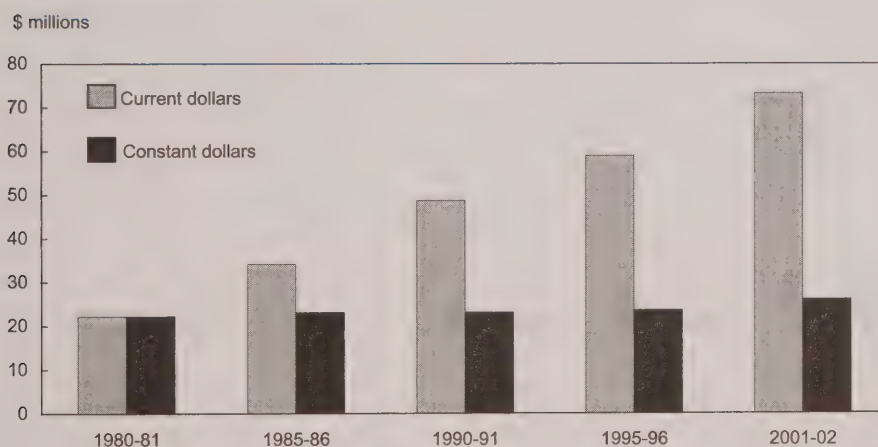
<sup>1</sup> Includes Russia.

<sup>2</sup> Includes Central America and the Caribbean.

<sup>3</sup> South America, Oceania, stateless, and not reported.

The distribution of foreign students by country of origin changed slightly between 1994-95 and 1998-99 academic years. In 1994-95, 44.9% of all foreign students came from Asian countries and 19.6% from Europe. By 1998-99, the proportions were 36.7% and 24.3%. At the same time, a slight increase was seen in the proportion from North American countries (including Central America and the Caribbean).

## Total expenditure on education



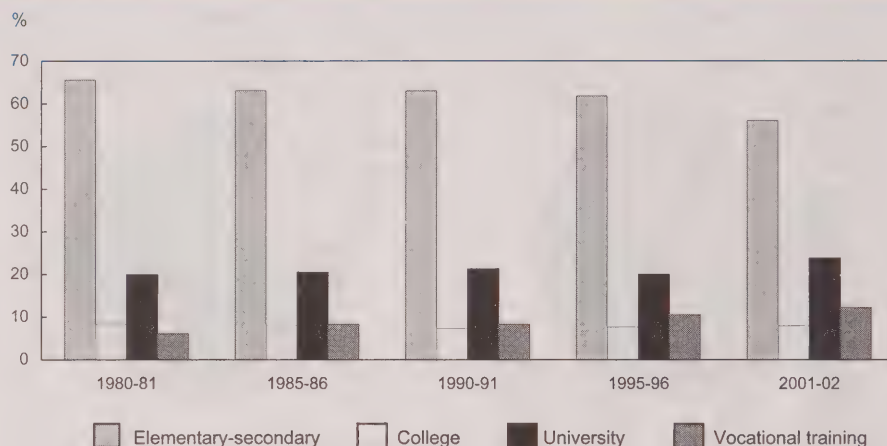
In total, Canada spent \$73.2 billion on education in the 2001-02 academic year compared with \$22.2 billion in 1980-81. However, adjusting for inflation (using the change in the consumer price index), the difference dropped to just \$3.8 billion as the 2001-02 expenditure became \$26 billion in 1980

dollars. In other words, 92.5% of the increase in total education expenditure between 1980 and 2001 was due to inflation and the rest to other factors (such as more instructors, services and materials, and infrastructure). Since most education expenses are sensitive to inflation—wages and salaries, goods and services, and capital outlays—this result is not unexpected.

## Share of expenditure on education by level

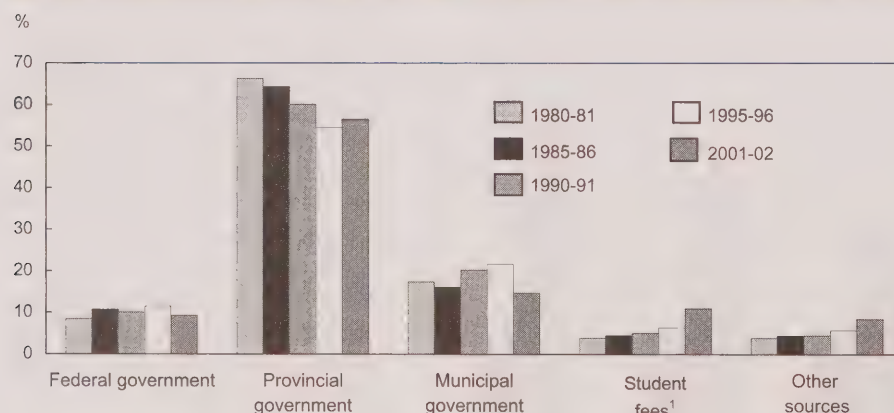
The distribution of education spending by type of institution has changed over the last two decades. In the 1980-81 academic year, 66 cents of each dollar went to elementary and secondary schools, 8 cents to colleges, 20 cents to universities, and 6 cents to trade and vocational training. By 2001-02, spending on schools was reduced by 10 cents, while 4 cents went to universities and 6 cents to vocational training.

The elementary-secondary school drop resulted from falling enrolment and restructuring or closings, largely due to the declining birth rate. The increase for universities and trade or vocational programs can be attributed to



growing demand for higher education and career-oriented trade skills—the latter necessitated by the changing labour market, globalization, international competitive forces, and other socio-economic factors.

## Share of expenditure on education by source of funding



<sup>1</sup> Student fees include tuition fees plus additional compulsory fees such as those for recreation and athletics, student health services, and student associations.

Canada is a provincial/territorial responsibility, most of the funding comes from this level: 66.3% in 1980-81 and 56.5% in 2001-02. The provincial share peaked at 68.4% in 1982-83. Federal spending remained between 8.2% and 11.5% over the period.

Some shift to private sources has occurred over the last two decades—in 2001, 80.5% of funding was public compared with 92.2% in 1980. This 12 percentage-point drop was offset by an increase of 7 points in direct student fees, and another 5 from private sources.

Education is funded by all three levels of government, student fees and private sources including bequests, donations, non-government grants, investment income, and borrowings. Since the provision of education in

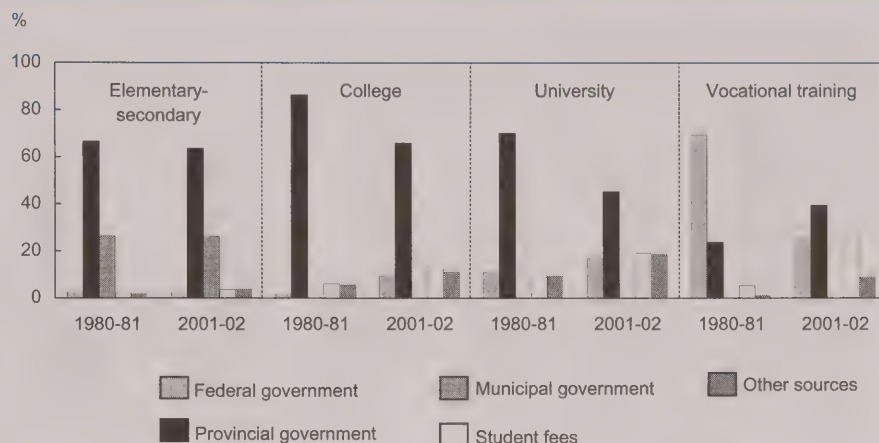


## Source of funding

Funding sources vary by type of institution. Public funds (money directly spent by the three levels of government) were the major source of financing at all levels.

Elementary-secondary schools spent \$41.0 billion in 2001 compared with \$14.6 billion in 1980. Almost all of this was publicly funded (93% to 96%), with provincial governments accounting for two-thirds. Community college expenditures rose from \$1.8 billion to \$5.8 billion, but the share financed through public funds (from federal and, mainly, provincial governments) fell from 88.5% to 75.3%. This shortfall shifted the burden more to students than to other private means; the share of student fees went from 6.1% to 13.6%.

University spending quadrupled (\$4.4 billion to \$17.5 billion) between 1980 and 2001. The

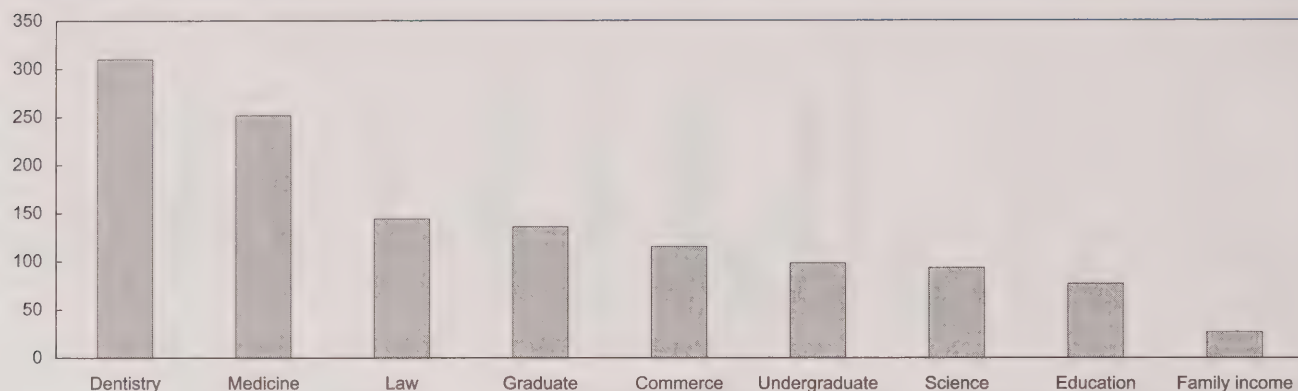


provincial share fell from 70.1% to 45.2%, while the federal share rose from 11.1% to 16.7%. The increased federal share went toward more sponsored research and development since such funds are not generally used for operating costs. Over the last two decades, universities have doubled their financial dependence on private sources, such as donations and non-government support (from 9.8% to 18.6%) and student fees (from 9.0% to 19.2%).

Spending on trade/vocational training crept up from \$1.3 billion in 1980 to \$8.9 billion in 2001. The federal share fell from 69.5% to 25.0% as the provinces increased their funding (from 23.7% to 39.4%) and student fees rose (5.3% to 26.7%).

## Change in average family income and tuition fees for selected university faculties

% change between 1990-91 and 2000-01



Note: All money data are in 2001 dollars.

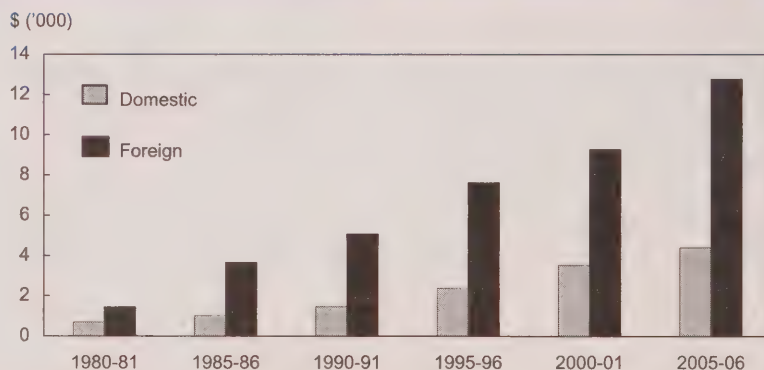
Between 1990-91 and 2000-01, increases in university fees greatly exceeded the growth in family incomes—in 2001 dollars, average pre-tax family income increased by 27% whereas fees for undergraduate programs rose by 99% and graduate programs by

136%. Fees went up 310% for dental schools, followed by 252% for medical schools, 144% for law schools, and 94% for science programs.

Rising fees may dampen enrolment or create economic hardship for those keen to advance their education and skills at a university.

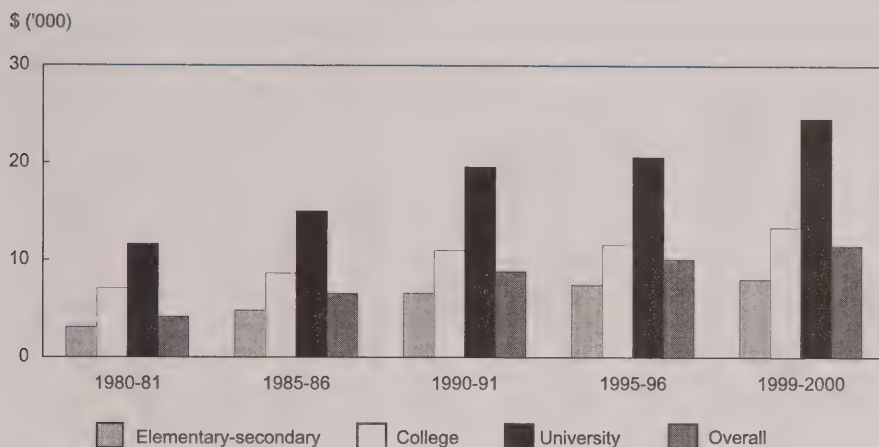
## Weighted average university tuition fees for full-time domestic and foreign students

Foreign students typically pay two to three times the fees paid by domestic students, whether for undergraduate or graduate programs. In the 1980-81 academic year, the weighted average tuition fee paid by full-time foreign students was \$1,400 whereas their domestic counterparts paid \$700; by 2005-06, the respective fees were \$12,800 and \$4,400—jumps of 8.8 times and 6.3 times. High fees for foreign students may have contributed to their declining enrolment at Canadian universities.



Note: All money data are in current dollars.

## Average education expenditure per full-time student



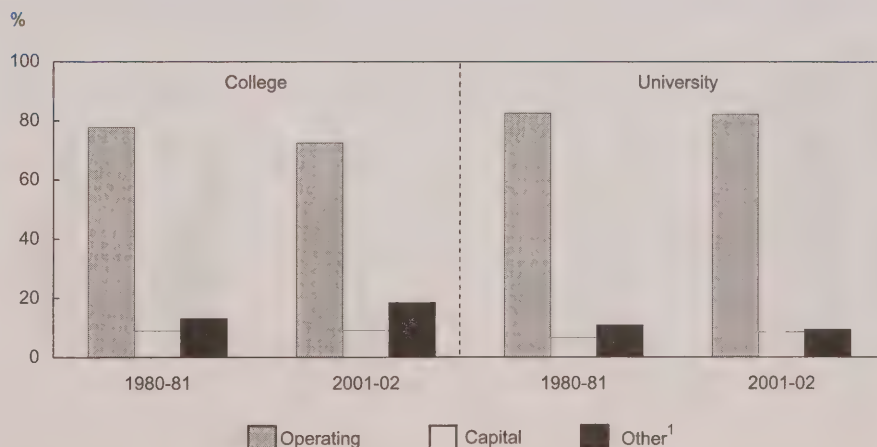
Note: All money data are in current dollars.

Compared with elementary-secondary school, the average expenditure per full-time student nearly doubles at college and triples at university. These ratios remained almost unchanged between 1980 and 1999.

Over the period, the cost per full-time student escalated from \$3,100 to \$8,000 for elementary-secondary schools, from \$7,100 to \$13,400 for colleges, and from \$11,600 to \$24,500 for universities.

## Disbursement of total education expenditure for colleges and universities

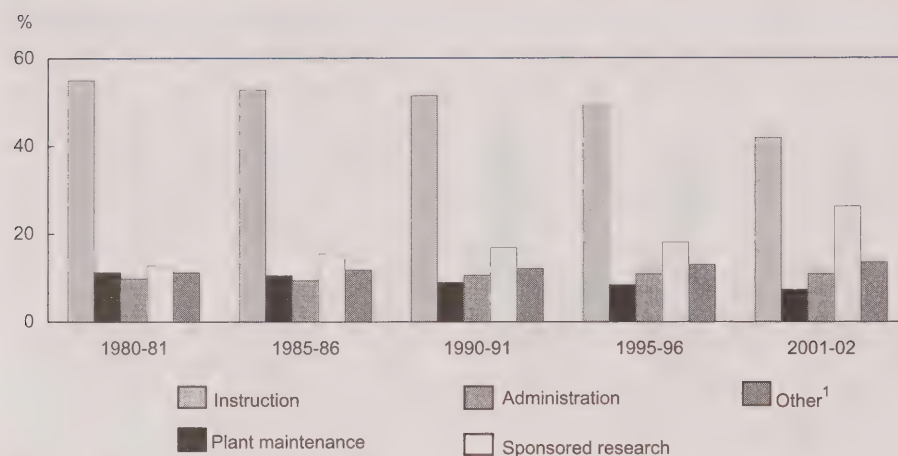
During both the 1980-81 and 2001-02 academic years, the lion's share of the expenditure dollar went to cover operating costs—between 72 and 78 cents for colleges and about 83 cents for universities. For both, the second largest component was student support and other departmental expenditures (excluding capital outlays), with colleges spending relatively more (between 13 and 18 cents) than universities (between 9 and 11 cents). The remainder was spent on capital outlays.



<sup>1</sup> Student support and other departmental expenditure



## Components of university operating expenditures



<sup>1</sup> Includes libraries, student services, and other unspecified expenditures.

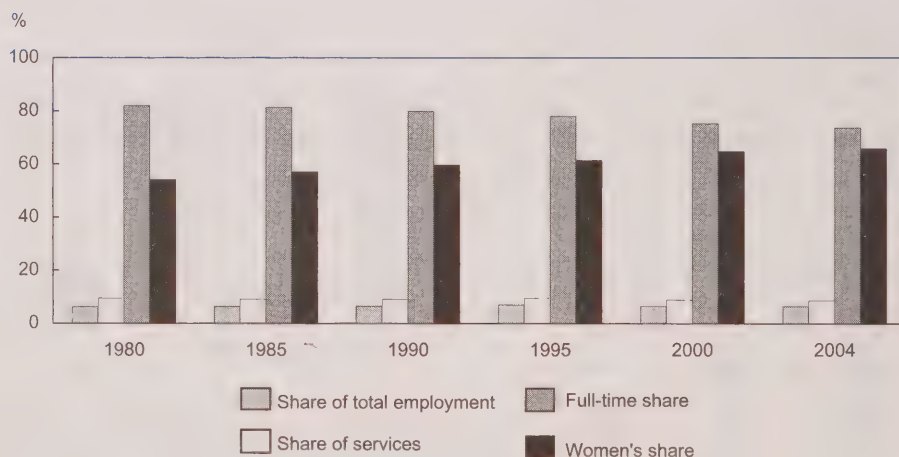
For universities, expenditure on instruction (wages and salaries of teaching staff and supplementary labour costs) accounted for 55.0% of operating costs in the 1980-81 academic year. This was followed by 11.2% for plant maintenance, 9.8% for administration, and 12.8% for sponsored research.

The remaining 11.2% went for libraries, student services, scholarships, and other expenses. By 2001-02, the share spent on sponsored research had risen (to 26.3%) while all other components fell—instruction by 13.1 percentage points.

Undertaking and spending more on sponsored research may qualify universities to receive more federal funding. Spending less on instruction may mean a reduction in permanent teaching staff; larger class sizes; the hiring of temporary, contract, or part-time staff; and more use of teaching aids.

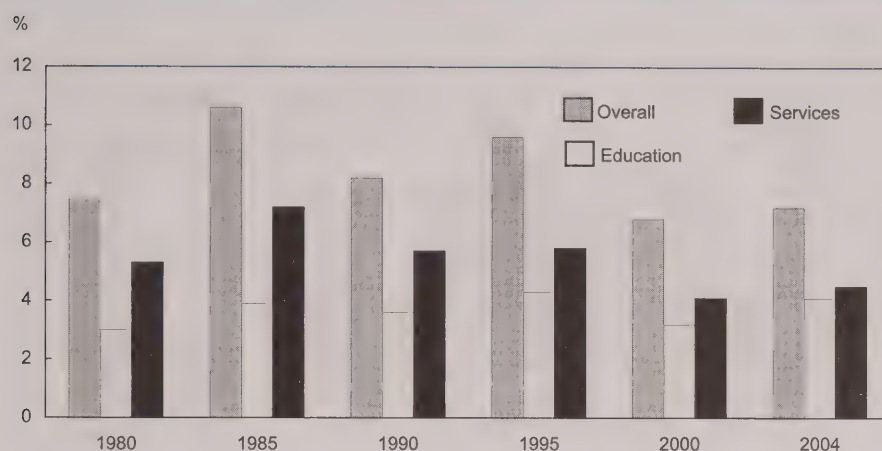
## Employment in educational services

Between 1980 and 2004, total employment grew from 11 million to 16 million, and educational services employment from 695,000 to 1,038,000, keeping the proportion employed in the educational services industry at 6% to 7%. Overall service employment grew from 7 million to 12 million, leaving educational services at 9% of total services.



The proportion employed full time in educational services has been sliding—from 82% in 1980 to 74% in 2004 (one factor responsible for reduced expenditure on instruction). At the same time, women have increased their representation—from one-half to two-thirds of employment in educational services.

## Unemployment rate in educational services

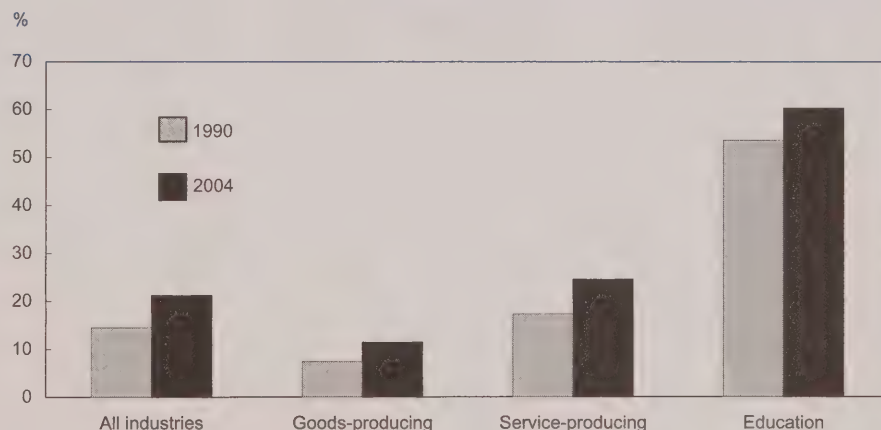


lower than the rate for all services or all industries. Between 1980 and 2004, the overall unemployment rate fluctuated between 6.8% and 12.0%, while in educational services, it varied between 3.0% and 4.6%.

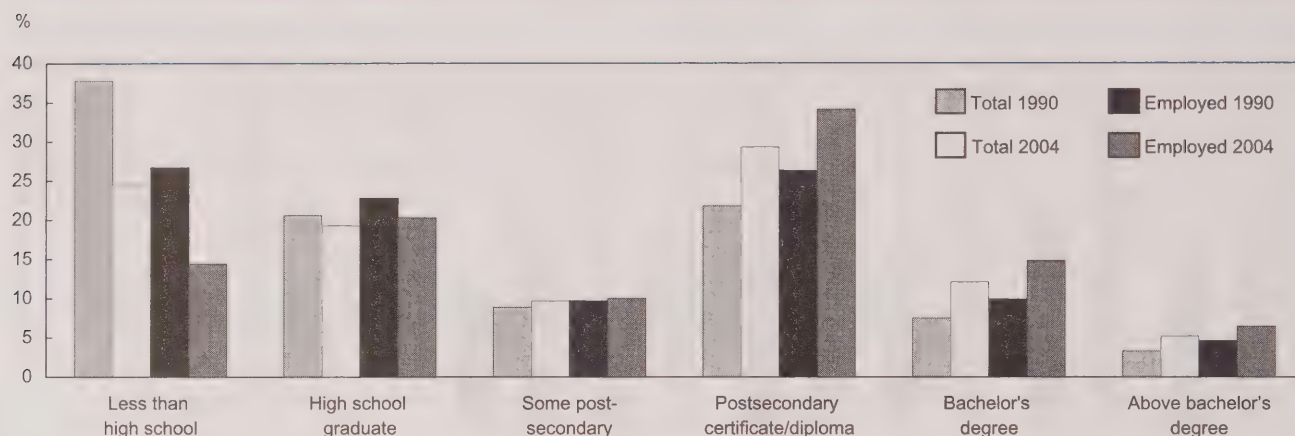
Generally, higher levels of education and skills are associated with lower unemployment. Those employed in educational services, who have relatively higher levels of education (see chart below), had an unemployment rate much

## Percentage of employed with a university degree

Since the majority employed in educational services are teachers, they are likely to have higher levels of education—for many, a university degree may be an entry requirement. Some 60.3% had a university degree in 2004 compared with 53.6% in 1990—the corresponding proportions for the overall service-producing sector were 24.5% and 17.3%; for goods-producing, 11.4% and 7.4%. Among employed persons generally, the proportion with a university degree rose from 14.5% to 21.2% over the period.



## Population and employed 15 and over by level of education



Educational attainment can be used as a crude proxy for the stock of human capital (the knowledge and skills that people acquire). In the general population, the proportion that had completed postsecondary education increased from 32.6% in 1990 to 46.6% in 2004; the proportion with a university degree increased from one-tenth to one-sixth over this period.

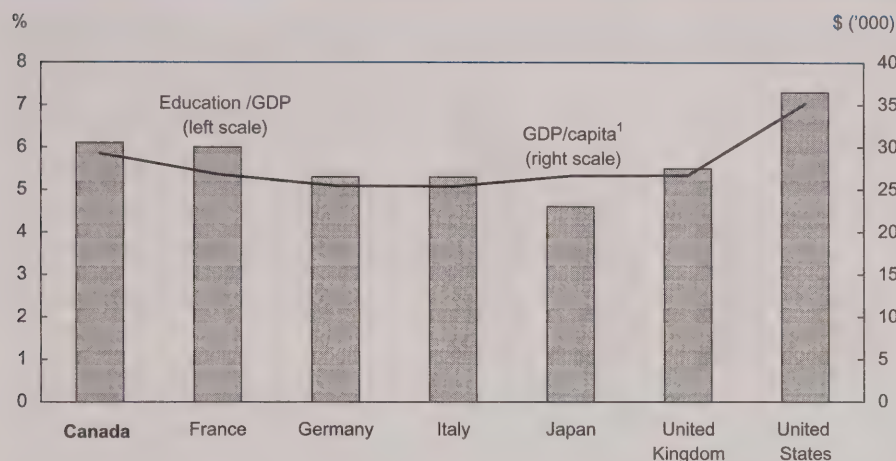
Among the employed, the shifts by education were more noticeable: 55.3% had completed postsecondary education in 2004 compared with 40.8% in 1990. Although the proportion with a bachelor's degree

increased by 5 percentage points (from 9.9% to 14.8%), the proportion with credentials above a bachelor's degree inched up by less than 2 points (4.6% to 6.4%).

Factors responsible for this improvement in human capital may include government initiatives to promote higher education, the desire to maintain Canada's social and economic competitiveness with other advanced nations, the labour market seeking more skilled persons, and changing demographics (for example, population aging, more immigration).



## Education expenditure as a percentage of GDP for G-7 countries, 2001



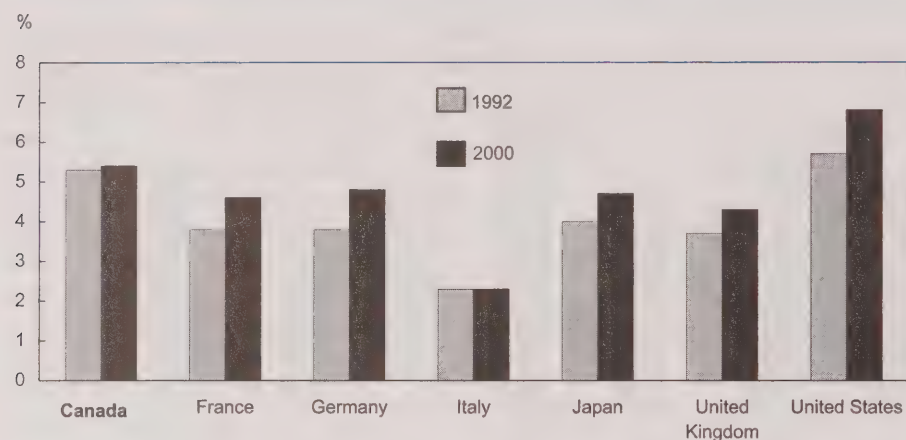
<sup>1</sup> Based on purchasing power parity in US 2001 dollars.

Among G-7 countries, Canada ranked second only to the United States in respect to spending on education. In 2001, expenditure on education was 6.1% of GDP compared with 7.3% in the United States and 4.6% in Japan.

Countries with higher GDP per capita spent a relatively larger share of GDP on education as well. The top four countries, ranked on the basis of these two ratios, were the United States, Canada, France and the United Kingdom. The remaining three G-7 countries showed a different pattern; for example, Japan, which ranked fifth on the basis of GDP per capita, was at the bottom in terms of GDP spent on education.

(GDP per capita is commonly used to compare living standards internationally. The ratio is based on purchasing power parity, which reflects the equivalent national currency needed to buy the same basket of goods that one US dollar will buy in the United States.)

## Investment in knowledge as a percentage of GDP for G-7 countries



Knowledge can be gained not only through formal education but also through research and development activity and day-to-day job experience. Accordingly, it may be more meaningful to compare countries in terms of investment in knowledge rather than just formal education. Investment in knowledge includes spending on public and private higher education, research and development, and software. The importance a country places on knowledge can be gauged by its investment in knowledge expressed as a percentage of GDP.

Based on this ratio, Canada again ranked second only to the United States in both 1992 and 2000. Over this period, Canada's ratio barely changed (from 5.3% to 5.4%) while the U.S.'s climbed from 5.7% to 6.8%. Japan, which ranked at the bottom with respect to expenditure on education, ranked third in 1992 and fourth in 2000 in expenditure on knowledge. Japan, like the United States and Canada, has been putting emphasis on research and development activities as well as on developing software. On the other hand, the United Kingdom, which ranked fourth both in expenditure on formal education and per capita income, ranked sixth in investment in knowledge.

For further information, contact Raj Chawla, Labour and Household Surveys Analysis Division, at (613) 951-6901 or [raj.chawla@statcan.ca](mailto:raj.chawla@statcan.ca).

# Minimum wage

**M**inimum wage legislation, one of Canada's oldest social policies, exists in every province and territory as part of employment standards legislation. The minimum wage is the lowest rate an employer can pay employees who are covered by the legislation (see *Data*

*source and definitions*). To evaluate the potential impact of a change in minimum wage legislation, it is important to understand who works for minimum wage and what types of jobs they hold.

## Data source and definitions

The **Labour Force Survey (LFS)** is a monthly household survey of about 54,000 households across Canada. Demographic and labour force information is obtained for all civilian household members 15 years of age and older. Excluded are residents of institutions, persons living on Indian Reserves, and residents of the Territories.

Every province and territory stipulates a minimum wage in its employment standards legislation. It is an offence for employers to pay eligible employees less than the set rate, regardless of how remuneration is calculated (hourly, daily, weekly, monthly, or on a piecework basis). Likewise, employees are prohibited from accepting pay that is less than the applicable minimum. The minimum wage rate varies from province to province, and a change can become effective in any month of the year.

The self-employed are not covered by minimum wage legislation and as such are not included in the analysis. Unpaid family workers are also excluded.

Other exclusions and special coverage provisions vary and include young workers (Ontario and Newfoundland and Labrador), workers with disabilities (Alberta, Manitoba and Saskatchewan—rarely used), domestic and live-in care workers (New Brunswick, Prince Edward Island, Manitoba and Quebec), farm labour (Alberta, Manitoba, Ontario and Saskatchewan), and home-based workers (for example, teleworkers, and pieceworkers in the clothing and textile industry). Other specific minimum wage rates cover non-hourly and tip-related wage rates (for example, Ontario has a special minimum wage rate for employees who serve alcoholic beverages in licensed establishments). A more complete description of exclusions and special rates is available from Human Resources and Skills Development Canada's database on minimum wages (Internet: [www110.hrdc-drhc.gc.ca/psait\\_spila/lmnc-eslc/eslc/salaire\\_minwage/intro/index.cfm/doc/english](http://www110.hrdc-drhc.gc.ca/psait_spila/lmnc-eslc/eslc/salaire_minwage/intro/index.cfm/doc/english)).

The number of employees working for minimum wage was calculated using the applicable **minimum wage for**

**experienced adult workers** (also known as the **general adult rate**) for each province for each month of 2004. The average of these 12 monthly observations provides the annual estimate for each province, while the total for Canada is the sum of the provincial estimates.

To determine whether an employee worked at or below the general adult rate wage for each province, hourly earnings were calculated using the reported wage or salary before taxes and other deductions. If the wage or salary including tips, commissions and bonuses was reported hourly, it was used directly. Other wage rates were converted to an hourly rate using the usual weekly hours of work. In principle, tips, commissions and bonuses should have been excluded to capture only those whose true base hourly wage was at or below the provincial general adult rate, but the required information is not collected. The result is a slight downward bias in the number of paid workers working at or below the official general adult rate set by each province. However, none of the exclusions or special minimum wage rates (such as special minimum wage rates for tip earners and young workers) were used, which introduces an upward bias.

**Note:** Several provinces increased their minimum wage rates during 2005: Alberta (\$7.00, September 1); New Brunswick (\$6.30, January 1); Prince Edward Island (\$6.80, January 1); Ontario (\$7.45, February 1); Manitoba (\$7.25, April 1); Quebec (\$7.60, May 1); Newfoundland and Labrador (\$6.25, January 1); and Saskatchewan (\$7.05, September 1). Nova Scotia's minimum wage rate is scheduled to increase to \$6.80 on October 1. Therefore, Newfoundland and Labrador will have the lowest rate by the end of 2005.

Student estimates are based on an average eight-month academic year (January to April and September to December, 2004).



## Lowest proportion in Alberta

In 2004, some 621,000 individuals worked at or below the minimum wage rate set by their province. This represented 4.6% of all employees in Canada. Minimum wages ranged from a high of \$8.00 per hour in British Columbia to a low of \$5.90 in Alberta. The latter province also had by far the lowest proportion of employees working at or below minimum

wage (0.9%), while Newfoundland and Labrador had the highest (6.5%). Alberta also had one of the highest average hourly wages at \$18.55 per hour and by far the lowest unemployment rate (4.6%). Newfoundland and Labrador had one of the lowest average hourly wages at \$15.46 per hour, and by far the highest unemployment rate (15.6%).

	Total employees	Minimum wage		General adult minimum wage		Average hourly wage	Unemployment rate
		Total	Incidence				
	'000	'000	%	\$/hour	Date	\$/hour	%
<b>Province</b>							
Newfoundland and Labrador	188.5	12.3	6.5	6.00	Nov 2002	15.46	15.6
British Columbia	1,671.7	104.2	6.2	8.00	Nov 2001	18.99	7.2
Nova Scotia	383.2	21.2	5.5	6.50	Apr 2004	15.82	8.8
Ontario	5,381.9	283.0	5.3	7.15	Feb 2004	19.42	6.8
Manitoba	490.0	23.9	4.9	7.00	Apr 2004	16.76	5.3
<b>Canada</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>	...		<b>18.50</b>	<b>7.2</b>
Prince Edward Island	56.7	2.5	4.4	6.50	Jan 2004	15.08	11.3
Quebec	3,201.6	140.2	4.4	7.45	May 2004	18.00	8.5
Saskatchewan	383.1	12.7	3.3	6.65	Nov 2002	16.93	5.3
New Brunswick	308.5	7.8	2.5	6.20	Jan 2004	15.18	9.8
Alberta	1,432.8	13.3	0.9	5.90	Oct 1999	18.55	4.6

Source: Labour Force Survey, 2004

## Share of employees working for minimum wage or less, by province

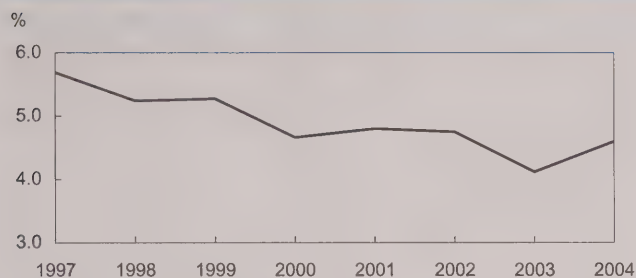
	1997	1998	1999	2000	2001	2002	2003	2004
	%							
<b>Canada</b>	5.7	5.2	5.3	4.7	4.8	4.8	4.1	4.6
Newfoundland and Labrador	9.2	9.6	8.3	8.7	5.7	7.5	8.4	6.5
Prince Edward Island	4.8	5.0	3.7	3.7	3.2	4.5	4.0	4.4
Nova Scotia	8.0	6.6	6.2	4.9	4.1	4.6	5.9	5.5
New Brunswick	6.7	6.7	6.1	6.0	4.2	4.2	4.0	2.5
Quebec	6.4	6.0	6.4	5.4	7.0	6.1	5.1	4.4
Ontario	5.6	5.4	4.9	4.6	4.1	4.0	3.5	5.3
Manitoba	3.9	3.5	6.7	5.2	4.5	4.8	4.5	4.9
Saskatchewan	5.7	4.1	9.4	5.9	4.3	4.8	5.0	3.3
Alberta	3.0	2.9	2.5	2.0	1.5	1.1	1.1	0.9
British Columbia	6.2	5.1	4.5	4.6	6.0	7.7	5.6	6.2

Source: Labour Force Survey

Six provinces raised their minimum wage rates in 2004: New Brunswick, Prince Edward Island, Ontario, Nova Scotia, Manitoba, and Quebec. The number and the proportion of minimum wage workers increased in three of these prov-

inces—Prince Edward Island, Ontario, and Manitoba—while decreasing in the other three. In British Columbia, which also experienced an increase in minimum wage workers, the minimum wage rate remained unchanged in 2004. Rates also remained unchanged in Alberta, Saskatchewan, and Newfoundland and Labrador, but the number and proportion of workers working for minimum wage in these provinces declined.

## The proportion of employees earning minimum wage edged up in 2004 after falling steadily since 1997.



Source: Labour Force Survey

From 1997 to 2003, the proportion of employees earning minimum wage or less fell steadily, from 5.7% to 4.1%. In 2004, the rate edged up to 4.6%.

## Most minimum wage workers are women and young

Women accounted for almost two-thirds of minimum wage workers, but less than half of all employees. This translated into a higher proportion of women working for minimum wage—1 in 17 compared with 1 in 30 men. This overrepresentation held across all age groups, with rates for women being mostly double those for men.

One in three teenagers aged 15 to 19 worked for minimum wage. This age group had by far the highest rate and accounted for nearly half of all minimum wage workers. A large majority were attending school either full or part time. Another 17% of minimum wage workers were aged 20 to 24, almost half of them students. In total, two-thirds of minimum wage workers were under 25, compared with only 17% of all employees. This translates into an incidence rate nine times that of those 25 years and older—1 in 6 versus 1 in 53.

A sizeable proportion (28%) of minimum wage workers were aged 25 to 54, many of them women. For these individuals in their core working and peak earning years, minimum wage work is likely not a transitory phase.

The incidence of working for minimum wage declined sharply with age but rose slightly among those 55 and older. The latter is a reflection of some of the low-wage occupations in which working seniors tend to be concentrated: retail salespersons and sales clerks; general office clerks; janitors, caretakers and building superintendents; babysitters, nannies and parents' helpers; and light duty cleaners.

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Both Sexes</b>			
15 and over	13,497.9	621.1	4.6
15 to 24	2,358.6	408.6	17.3
15 to 19	881.8	302.0	34.2
20 to 24	1,476.8	106.6	7.2
25 and over	11,139.3	212.4	1.9
25 to 34	3,105.8	64.2	2.1
35 to 44	3,460.0	61.0	1.8
45 to 54	3,100.2	47.8	1.5
55 and over	1,473.3	39.4	2.7
<b>Men</b>			
15 and over	6,867.1	226.3	3.3
15 to 24	1,190.8	153.1	12.9
15 to 19	439.3	112.5	25.6
20 to 24	751.5	40.6	5.4
25 and over	5,676.3	73.1	1.3
25 to 34	1,608.6	22.7	1.4
35 to 44	1,751.5	19.2	1.1
45 to 54	1,532.8	15.2	1.0
55 and over	783.4	16.0	2.0
<b>Women</b>			
15 and over	6,630.8	394.8	6.0
15 to 24	1,167.8	255.5	21.9
15 to 19	442.5	189.5	42.8
20 to 24	725.3	66.0	9.1
25 and over	5,462.9	139.3	2.5
25 to 34	1,497.2	41.5	2.8
35 to 44	1,708.5	41.8	2.4
45 to 54	1,567.3	32.6	2.1
55 and over	689.9	23.4	3.4

Source: Labour Force Survey, 2004

## Education makes a difference

Those with less than a high school diploma were almost five times as likely to be working for minimum wage or less as those with at least some postsecondary training—1 in 8 compared with 1 in 35. Four in 10 minimum wage workers did not have a high school diploma, compared with 1 in 7 for all employees. This corresponds with the high rates of minimum wage work among young people, many of whom have not yet completed their studies.

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Education</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
Less than high school	1,897.4	249.6	13.2
Less than grade 9	379.8	29.2	7.7
Some high school	1,517.6	220.4	14.5
High school graduate	2,782.8	128.6	4.6
At least some postsecondary	8,817.6	243.0	2.8
Some postsecondary	1,404.3	112.6	8.0
Postsecondary certificate or diploma	4,623.4	94.9	2.1
University degree	2,789.9	35.5	1.3

Source: Labour Force Survey, 2004

## Where do they work?

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Industry</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
<b>Goods-producing</b>	<b>3,331.4</b>	<b>50.9</b>	<b>1.5</b>
Agriculture	116.8	12.2	10.4
Forestry, fishing, mining, oil and gas	236.6	3.2	1.4
Utilities	132.8	F	F
Construction	642.1	5.9	0.9
Manufacturing	2,203.1	29.2	1.3
<b>Service-producing</b>	<b>10,166.5</b>	<b>570.2</b>	<b>5.6</b>
Trade	2,201.5	206.7	9.4
Transportation and warehousing	667.8	13.0	1.9
Finance, insurance, real estate and leasing	807.9	23.4	2.9
Professional, scientific and technical	651.4	9.9	1.5
Management, administrative and other support	484.1	18.6	3.8
Education	990.9	16.9	1.7
Health care and social assistance	1,521.3	25.1	1.6
Information, culture and recreation	614.0	35.5	5.8
Accommodation and food	921.3	180.2	19.6
Public administration	829.1	7.8	0.9
Other services	477.2	33.1	6.9

Source: Labour Force Survey, 2004

Minimum wage work is concentrated in the service sector. Accommodation and food services industries had by far the highest incidence, with 1 in 5 workers at or below minimum wage. Trade also had high rates—1 in 11. These industries are characterized by high concentrations of youth and part-time workers, who tend to have less work experience and weaker attachment to the labour force. These industries often do not require specialized skills or a postsecondary education, and have low levels of unionization. The many part-time jobs tend to favour a greater presence of women.

Agriculture also had a relatively high incidence of minimum wage workers—1 in 10. Farm labour has traditionally been excluded from minimum wage provisions. Workers in agriculture are often not unionized, but may be compensated for lower wages through non-wage benefits such as free room and board.

Highly unionized industries such as construction, public administration, and manufacturing were among those with the lowest rates of minimum wage workers.



## Part-time employment prominent

The rate of minimum wage work among part-time workers was seven times as high as for full-time workers (15.4% versus 2.2%). And, 60% of minimum wage workers worked part time, compared with less than 20% of all employees.

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Both sexes</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
Men	6,867.1	226.3	3.3
Women	6,630.8	394.8	6.0
<b>Full-time</b>	<b>11,053.5</b>	<b>244.8</b>	<b>2.2</b>
Men	6,142.1	98.4	1.6
Women	4,911.4	146.5	3.0
<b>Part-time</b>	<b>2,444.4</b>	<b>376.3</b>	<b>15.4</b>
Men	725.0	127.9	17.6
Women	1,719.4	248.4	14.4

Source: Labour Force Survey, 2004

## Most minimum wage jobs are short-term, in both large and small firms, and rarely unionized.

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Job tenure</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
1 to 3 months	985.9	125.2	12.7
4 to 6 months	891.9	100.2	11.2
7 to 12 months	1,167.8	117.6	10.1
13 to 60 months	4,438.1	210.4	4.7
61 months or more	6,014.1	67.6	1.1
<b>Firm size</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
Less than 20 employees	2,610.6	205.4	7.9
20 to 99 employees	2,200.7	101.3	4.6
100 to 500 employees	1,976.5	59.9	3.0
More than 500 employees	6,710.0	254.5	3.8
<b>Union membership</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
Union member or covered by collective agreement	4,286.6	51.3	1.2
Non-member and not covered by collective agreement	9,211.3	569.8	6.2

Source: Labour Force Survey, 2004

More than half of minimum wage workers had been in their current job for no more than one year, compared with less than one-quarter of all employees. Working for minimum wage was most prevalent among those who had held a job for three months or less (1 in 8), and least common among those in a job for more than five years (1 in 90).

Four in 10 minimum wage workers were employed by large firms (more than 500 employees) and another third by small firms (less than 20 employees). The incidence of working for minimum wage was highest in small firms—more than double that of large firms. Very few minimum wage workers (8%) enjoyed union membership or were covered by a collective agreement, compared with almost one-third of all employees. Only 1% of union members worked for minimum wage or less, as opposed to 6% of non-union members. The large number of part-time workers, as well as students and other young people working for minimum wage, combined with their sizeable presence in smaller firms, tends to limit the ability of these workers to organize and thus command better wages.

## Most minimum wage workers live at home with their parents

Almost two-thirds of minimum wage workers lived with their parents or another family member, reflecting the large number under 25, many still in school. The incidence of working for minimum wage for this group was more than three times the overall rate. Sons, daughters and other relatives living with family had some of the highest rates of working for minimum wage, particularly those under 20 and those attending school.

Almost one-quarter of all minimum wage workers were part of a couple. The incidence of working for minimum wage among couples was quite low—less than 2%. The majority had employed spouses, most earning more than minimum wage.

Other minimum wage workers included nearly 30,000 who headed a family with no spouse present (almost all with at least one child under 18), 34,000 with a spouse who was not employed, and 31,000 who lived alone. These three groups, particularly those who support a spouse or a child under 18, may have difficulty making ends meet on a minimum wage income alone.

	Total employees '000	Minimum wage	
		Total '000	Incidence %
<b>Total</b>	<b>13,497.9</b>	<b>621.1</b>	<b>4.6</b>
<b>Member of a couple</b>	<b>7,885.6</b>	<b>142.3</b>	<b>1.8</b>
Spouse not employed	1,486.4	33.7	2.3
Spouse unemployed	317.0	9.4	3.0
Spouse not in the labour force	1,169.4	24.3	2.1
Less than 55	764.6	13.4	1.8
55 and over	404.8	10.9	2.7
Spouse employed	6,399.2	108.6	1.7
Earning minimum wage or less	87.5	6.5	7.4
Earning more than minimum wage	5,451.2	81.5	1.5
Self-employed	860.4	20.6	2.4
<b>Head of family, no spouse present</b>	<b>878.8</b>	<b>29.2</b>	<b>3.3</b>
Youngest child less than 18	738.3	26.8	3.6
No children, or children 18 or older	140.5	2.4	1.7
<b>Son, daughter or other relative living with family</b>	<b>2,571.9</b>	<b>388.1</b>	<b>15.1</b>
15 to 19, in school	464.7	187.2	40.3
15 to 19, not in school	343.0	97.1	28.3
20 to 24, in school	229.6	29.0	12.6
20 to 24, not in school	603.6	43.5	7.2
25 or over, in school	52.1	2.6	5.0
25 or over, not in school	878.8	28.6	3.3
<b>Unattached individual</b>	<b>2,161.6</b>	<b>61.5</b>	<b>2.8</b>
Living alone	1,413.4	31.1	2.2
15 to 24	110.2	7.8	7.1
25 to 54	1,086.1	17.3	1.6
55 and over	217.2	6.0	2.8
Living with non-relatives	748.2	30.4	4.1
15 to 24	239.0	16.4	6.9
25 to 54	477.2	13.1	2.7
55 and over	32.0	F	F

Source: Labour Force Survey, 2004

### Perspectives

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# Cumulative index

1989–2005

*This index lists articles published in Perspectives on Labour and Income (Catalogue no. 75-001-XPE) since its inception (Summer 1989) up to and including the latest issue. For further information, call Henry Pold (613) 951-4608. The online publication date is shown in parentheses.*

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